TECHNOLOGY DEPT.

NEW EQUIPMENT DIGEST

A Penton Publication

March, 1954

Volume 19—Number 3

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CHECK AND PASS ALONG

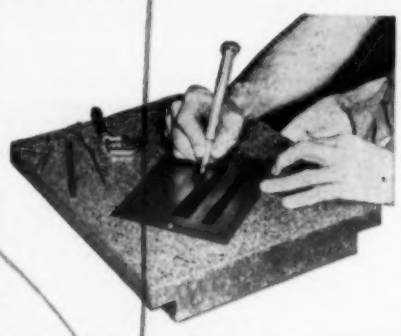
✓	NAME	See No.

Use Inquiry Slips—Pages 8 and 104

EQUIPMENT • MATERIALS • PROCESSES • DESIGNS • APPLICATIONS • LITERATURE

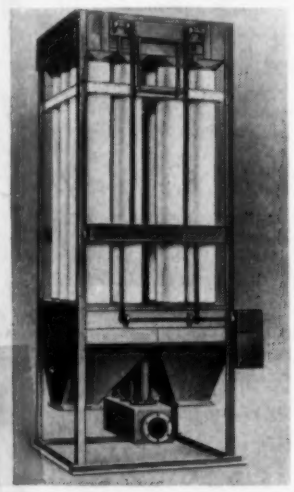
LAYOUT INK APPLICATOR
with bulk ink and felt-tip pen

Method of applying design layout ink utilizes bulk ink available in 8-oz, pint, quart and gallon containers with 8-in. felt-tip pen. Well adapted to small area layout work, pens have ink capacity of over 1 ounce and are of aluminum and brass construction, consisting of reservoir barrel, valve mechanism, felt tip assembly and cover cap. They can also be used to make legible identification or coding marks on frames, castings, etc. Replaceable tips are available in easily detachable pointed and chisel shapes. Ink also gives good results when applied by brush or other methods. Layout ink and pens are made by **Crown Industrial Products Co.**, 804 Amsterdam St., Woodstock, Ill.



▲ For more details circle **NED-1 C4** on enclosed inquiry slip ▲

DUST COLLECTOR
is reverse jet fabric type



Where extremely fine particles are involved, or where material must be collected in dry state for reclaiming, reverse-jet fabric type Amerjet dust collector is practical. Cleaning media is automatically reconditioned by jet of high pressure air forced through cloth in opposite direction to flow of air being cleaned. Because cleaning cycle is continuous, collector maintains constant pressure drop and thus a steady air volume at exhaust points. This method of media reconditioning permits high velocities through cleaning tubes. Made by **American Air Filter Co.**, 391 Central Ave., Louisville 8, Ky.

▲ For more details circle **NED-2 C4** on enclosed inquiry slip ▲

MACHINE LEVELING JACKS
have pads to absorb vibration

Increased strength, design change to allow greater compensation for unevenness of floors and larger hexagon head on the adjusting screw for better wrench grip are improvements made in line of EMPCO style JD machine leveling jacks. Style JD-2 is new medium size model in line which includes style JD-1 for light to medium weight equipment and style JD-3 for heavy equipment. Vibration absorbing Vi-Sorb mounting pads are available in varying thicknesses. Made by **Enterprise Machine Parts Corp.**, 2727 Jerome Ave., Detroit 12, Mich.

▲ For more details circle **NED-3 C4** on enclosed inquiry slip ▲

SAFETY POURING SPOUT
fits 1 to 1⅜-in. bottle openings

Smooth flow without spurts or splashes is assured by type SO pouring spout designed to prevent accidents and loss of materials caused by spilling, splashing and carelessness in pouring liquids into smaller containers. This safety vent spout fits bottle openings from 1 to 1⅜ in. and has flow capacity of over 1 gpm. It is made of acid-resistant rubber and plastic tubing for durability. Made by **General Scientific Equipment Co.**, 2701 W. Huntingdon St., Philadelphia 32, Pa.

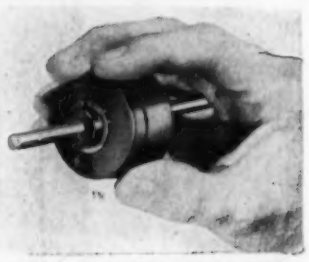
▲ For more details circle **NED-4 C4** on enclosed inquiry slip ▲

HAND CREAM DISPENSER
for antiseptic protective creams

Tamperproof dispenser is designed for antiseptic protective creams used to protect workers against dermatitis and other industrial skin diseases. It accommodates a 12-oz tube of such cream, dispensing a predetermined amount with each stroke of a lever. Dispenser assures economical use of the creams, and at the same time protects antiseptic properties against contamination. Made by **West Disinfecting Co.**, Dept. DE, 42-16 West St., Long Island City 1, N. Y.

▲ For more details circle **NED-5 C4** on enclosed inquiry slip ▲

ELECTRIC BRAKES & CLUTCHES
for control of low-torque drives have fast and precise responses



Compact electric brakes, clutches and clutch-couplings are designed for fast accurate control of low-torque drives. High-speed engagement and release, coupled with torque ratings from 8 to 240 lb-in., make units adaptable to starting, stopping, indexing, rapid cycling, synchronizing, torque limiting, indexing and jogging and single revolution cycling applications. Rated speeds are 10,000, 7200 and 4500 rpm. Push-button or automatic operation is possible with limit switches, relays, electric eyes and other electric controls.

Units operate on 6 to 15-w at 6, 12, 28, 40 and 90-v dc and require from 1⅜ to 2 9/32-in. axial space for mounting. Precision rotary and lineal positioning of machinery are easily obtained, voltage being adjusted by rheostats giving a wide selection of acceleration and deceleration rates. Automatic take-up for friction surface wear is provided. Made by **Warner Electric Brake & Clutch Co.**, Dept. N, Beloit, Wis.

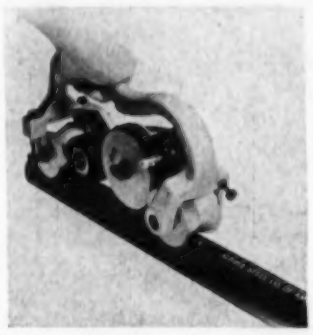
▲ For more details circle **NED-6 C4** on enclosed inquiry slip ▲

RETAINING RINGS
0.062-in. diameter stacked type

Available in carbon spring steel, beryllium copper and phosphor bronze, 0.062-in. diameter retaining rings are stacked on metal rods for fast assembly. Illustration shows stacked rings together with a cast iron base and applicator tool, which are supplied free with initial order. Rings support heavy thrust loads and vibration without displacement and can be re-used without loss of resiliency. With the addition of this size, rings are now available for shafts 1/16 to 1-in. diameter. Made by **Industrial Retaining Ring Co.**, 8 W. Sidney Ave., Mt. Vernon 1, N. Y.

▲ For more details circle **NED-7 C4** on enclosed inquiry slip ▲

BAR & TUBE PRINTER
for flat, round, square, hex surfaces



Aluminum portable printer weighs 8 lb and is adaptable for continuous printing of tradenames, codes or other legends on flat, round, square or hexagonal surfaces. Printer rides on front and rear positioning rolls and automatically adjusts itself to the size and shape of material being marked. A rubber-covered drive roll mounted behind the front positioning roll transfers power to the rotating printing roll. Unit has a large ink reservoir which feeds by capillary action to an inking pad. Solid rubber dies or interchangeable rubber type and multiple character logotype are available for use with the printer in a size range from ⅛ to ¼-in. Made by **Jas. H. Matthews & Co.**, 3943 Forbes St., Pittsburgh 13, Pa.

▲ For more details circle **NED-8 C4** on enclosed inquiry slip ▲

PORTABLE TOOL CABINET
can be equipped with drawers

Shipped knocked down and without drawers, the model 270 Porta-Cab portable tool toter can be assembled with a screwdriver. Drawers can be added as needed. Each shelf is belted in three directions. Unit has a baked enamel finish, optional casters and measures 27 x 18 x 32¼ in. Drawers are 21½ x 16¼ x 3¾ in. Tool capacity can be enlarged by adding the model 206 two-drawer chest which has 9⅛ x 26⅛ x 12-in. dimensions. Made by **Huot Mfg. Co.**, 571 N. Wheeler St., St. Paul W4, Minn.

▲ For more details circle **NED-9 C4** on enclosed inquiry slip ▲

NEW! VALVAIR SPEED KING SOLENOID PILOT OPERATED CONTROL VALVES

The New Valvair Speed King line is complete — 3-way, 4-way, 4-way-5-port (2-pressure), foot-mounted or sub-base manifold mounted; pipe sizes — ¼", ⅜", ½", ¾", 1". A precedent-breaker in size, weight, speed and endurance. Get all the facts!

VALVAIR CORPORATION Affiliate: Sinclair-Collins Valve Company 947 BEARDSLEY AVE., AKRON 11, O.
REPRESENTATIVES IN PRINCIPAL CITIES

Rely Upon Valvair DIVERSATILITY

ASK FOR BULLETIN "N-3".

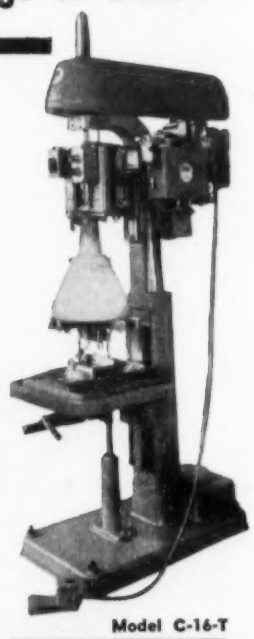
▲ For more details circle NED-10 C4 on enclosed inquiry slip ▲

extreme flexibility makes this new

BECKETT AIR THRUST DRILLING & TAPPING MACHINE

ideal for small lot production on a wide range of work!

- Single and multiple tapping *direct* from chuck or any standard drill head without clutch or lead screw. *Exact* thread reproduction in light metals, plastics and high-strength alloys.
- Controlled air - powered thrust provides *correct* drilling and tapping action —completely variable and quickly adjustable approach speed, return speed and working thrust.
- *Quick change-over* from drilling to tapping or allied operations and from light to heavy work.



Model C-16-T

Electrically Controlled

Hi-CYCLIC TM Reg.

Air Thrust

Max. thrust—980 lbs. at 100 p.s.i.
Stroke—4" (6" stroke available)
Capacity—Drill ¾" in steel; tap 1½" N.C. with 1½ h.p. motor.

BECKETT Air Thrust Drilling and Tapping Machine, with electrically controlled "Hi-Cyclic" Air Feed, performs single and multiple tapping without employing a clutch or lead screw. Absolute and precise control of the air thrust at low pressures provides extremely sensitive tapping action. The tap provides its own lead and reproduces a thread with maximum fidelity to the ground tap. A Class 4 fit has been produced in magnesium.

This is a rugged, accurate machine, with heavy base, box column and gibbed ways for sliding head and adjustable work table. Available in models for drilling only and for drilling and tapping. Bench and floor types and table multiple units for continuous line production.

You can *triple* your drilling and tapping production—at *great savings*—with the new Beckett Air Thrust Drilling and Tapping Machine. The investment is *low*—and deliveries are *good!*

Write TODAY for complete details and Your Copy of BULLETIN No. 50

BECKETT-HARCUM CO., INC.
1147 Wayne Road, Wilmington, Ohio

▲ For more details circle NED-11 C4 on enclosed inquiry slip ▲

PLAN TO ATTEND THE ASTE EXPOSITION at Philadelphia, April 26-30

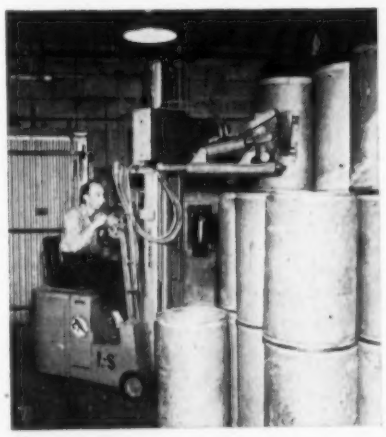
Greater production per man-hour of labor will be the predominant theme of the 1954 ASTE Industrial Exposition at Philadelphia's Convention Center, April 26 through April 30, 1954. New and improved machine tools; safe labor-saving feeding, holding and handling devices; cutting and production tools; precision inspection and testing equipment; finishing machines and accessories and hundreds of other short-cuts to low-cost production will be shown. More than 480 exhibitors will occupy 155,000 sq ft of exhibit space.

There will also be a complete program of conferences, panel discussions and papers presented by top engineers and executives in fields such as plant management, automation, quality control, engineering, production and tooling. Topics will range through all phases of manufacturing.

Plan now to attend this ninth biennial exposition and conference which is sponsored by the 28,000-member American Society of Tool Engineers. You will be able to see first-hand many of the hundreds of new machines, equipment and materials that have been or will be described in NEW EQUIPMENT DIGEST. You will be welcome at our booth, No. 1217, at the Convention Center. Time—April 26-30, 1954. Place—Convention Center, Philadelphia.

A. N. Gregg
EDITOR

DRUM UP-ENDER ATTACHMENT for fork truck, allows drum dumping

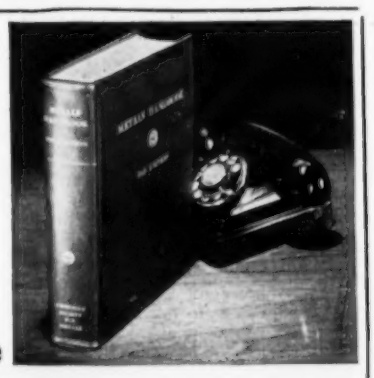


Drum handling and dumping abilities are combined by this drum up-ender attachment shown adapted to Lewis-Shepard model J, 2000 - lb capacity electric fork truck. Attachment consists of modification of standard hydraulically adjustable clamping forks, accommodating any drum or barrel size, plus hydraulically controlled pivot which tilts container forward 150 degrees. All motions, clamping, lifting, and dumping are controlled from driver's position. Made by **Lewis-Shepard,** Dept. R-36, Watertown 72, Mass.

▲ For more details circle NED-12 C4 on enclosed inquiry slip ▲

The Metals Handbook

1332 Large pages
1752 Illustrations
1057 Tables
803 Articles
1,620,000 Words
40,000 Copies in use



Here is a book without a competitor . . . a book 25 years in the making. The current, 7th edition of the Metals Handbook was compiled and written by 68 committees of the American Society for Metals; more than 500 metals engineers were hand picked by the Society as the top experts, the men best qualified to write the most authoritative possible reference book on metals, metal properties, fabrication and uses. The book they wrote is the Metals Handbook. It is divided into 37 principal sections, and contains 803 separate articles and data sheets on metals, metal shaping, forming, heat treating, welding, machining, foundry work, cleaning, finishing, testing, inspection, control and research techniques. All metals, all processes are included. The 64-page index and 4-page section on how to use the book make it easy for any reader to find what he wants. Over 40,000 copies of this edition are now in use by engineers, metallurgists, designers, production men, executives, purchasing agents and others. Order your copy today by returning the coupon below. The price is $15.00.

American Society for Metals, Room 309
7309 Euclid Ave., Cleveland 3, Ohio

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☐ $15.00 Enclosed ☐ Bill me.

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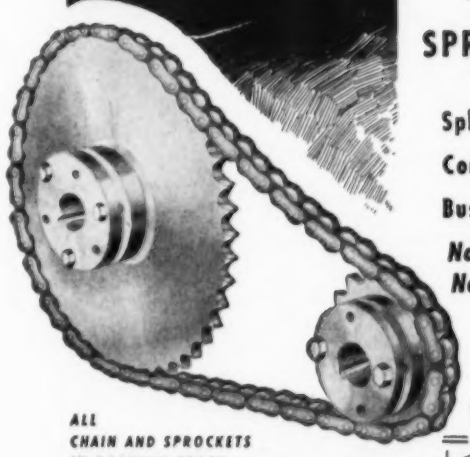
Improve Your Operating Efficiency, Quality and Profits with these LAST WORD Metal-Working Products!

LAST WORD sales company
18500 MT. ELLIOTT (Dept. E) • DETROIT 34, MICH.

▲ For more details circle NED-14 C4 on enclosed inquiry slip ▲

BROWNING Roller Chain Drives

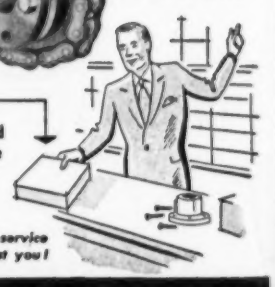


SPROCKETS with Split Taper Compression Bushings

No Reboring No Welding

Write for Catalog CD102.

ALL CHAIN AND SPROCKETS IN PACKAGE STOCK



NOW! you have the same simplified BUSHING system for Single and Multiple Groove Sheaves — Rigid and Flexible Couplings — Paper Pulleys and ROLLER CHAIN SPROCKETS.

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BROWNING MANUFACTURING COMPANY MAYSVILLE, KENTUCKY, U.S.A.

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GOODALL "Long-Life" Plastic ELECTRICAL TAPE

Extra Strength, Durability, Safety, for Every Splicing and Taping Job

Provides permanent insulation-protection. Easy to use. Wraps tightly around smallest diameter wire. Dielectric resistance—7,000 Volts.

Resists action of acids, oil, grease, weather. Has exceptional adhesive properties. Available in 20 ft. rolls, cellophane wrapped, and 60 ft. rolls in individual metal containers. Std. width, ¾". Std. thickness, .007". Approved by Underwriters' Laboratories.

Order From Our Nearest Branch

GOODALL RUBBER COMPANY
GENERAL OFFICES, MILLS and EXPORT DIVISION, TRENTON, N. J.
Branches: Philadelphia • New York • Boston • Pittsburgh • Indianapolis • Chicago • Detroit • St. Paul • Los Angeles • San Francisco • Seattle • Spokane • Portland • Salt Lake City • Denver • Houston • Goodall Rubber Company of Canada, Ltd., Toronto • Distributors in Other Principal Cities
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▲ For more details circle NED-16 C4 on enclosed inquiry slip ▲

SUPER-Light
SUPER-Portable
Speedways NEW Aluminum Gravity Wheel Conveyors —
will do many materials handling jobs in many different places in your plant

- The unmatched economy of SPEEDWAYS new Aluminum Gravity Wheel Conveyors is in their super-lightness. Being almost 66 2/3% lighter than steel types, one Aluminum Conveyor system will do double-duty in many places in your plant.
- Made of super-strong, highly-rated aluminum alloy that is actually stronger and tougher than steel, Speedways Aluminum Gravity Wheel Conveyor will move 850 lbs. live load per 10 lineal feet.
- SPEEDWAYS Aluminum Gravity Wheel Conveyor is designed to save you time . . . money . . . labor . . . and to reduce accidents. It offers an all-around economy that is easy to afford Write for complete details and new Bulletin N-553.

SPEEDWAYS CONVEYORS INCORPORATED
202-208 RHODE ISLAND ST. BUFFALO 13, N. Y.

For more details circle NED-17 C4 on enclosed inquiry slip

NEW STAINLESS STEEL FINISH FOR YOUR PRODUCT

Steelcote
STAINLESS STEEL COATING

Defies acids, alkali, chemicals, oil, grease, salt air and water, heat, cold, sunlight and abrasion.

Non-inflammable, non-toxic when dry. Film is extremely tough, durable and flexible. No more chipping.

May be sprayed, brushed or dipped. Dries quickly. Does not discolor.

Also available in colors.

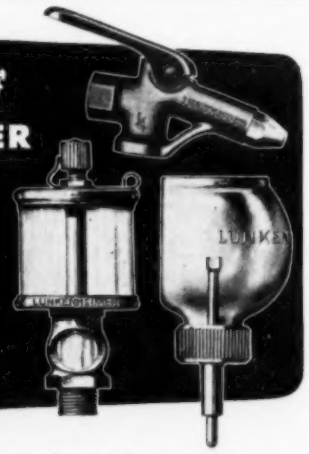
For complete information, write Dept. 12

STEELCOTE MFG. CO. • 3418 GRATIOT • ST. LOUIS 3, MO.

For more details circle NED-18 C4 on enclosed inquiry slip

take advantage of
LUNKENHEIMER Quality

- ★ AIR DEVICES
- ★ LUBRICATORS
- ★ GREASE CUPS
- ★ OILERS



Lunkenheimer produces the highest quality Engineering Devices, as well as the world's finest Valves. Make your machinery last longer with Lunkenheimer Lubricating Devices. Cut the high cost of compressed air leaks with Lunkenheimer Air Nozzles and Cocks. The Lunkenheimer Line includes oilers, grease cups, lubricators, cocks, nozzles, liquid gauges, and whistles. Ask for literature. The Lunkenheimer Co., Cincinnati 14, Ohio.

LUNKENHEIMER®
THE ONE *Great* NAME IN VALVES
L-253-12A

For more details circle NED-19 C4 on enclosed inquiry slip

PORTABLE DUST BIN
used with Cyclone dust separator

Installations of Model 219 Twin Cyclone dust separators where large volumes of dust require frequent emptying of the dust reservoir can be fitted with this portable dust bin, offered as optional equipment. Use of bin requires that the model 219 unit be mounted on legs and equipped with a hopper bottom. A 12-in. diameter air-tight flexible sleeve leads from the hopper to a lid that fits on the bin with quick-acting clamp. Bin has a capacity of 8 cu ft and is equipped with rubber-tired casters. Made by **Torit Mfg. Co.**, 298 Walnut St., St. Paul 2, Minn.

For more details circle NED-20 C4 on enclosed inquiry slip

AIR-OPERATED PUMP
handles hot or cold liquids, slurries, and viscous fluids

Practically any type of fluid can be handled by this British-made Ejectopump which operates automatically from any compressed air supply line. Liquids are pumped in a series of regular suction and discharge strokes, and pump is self-priming. Among the liquids which can be handled are hot soup, glucose, jellies, latex, paints, lubricating oils, inflammable solvents, liquid-suspended abrasives and sewage. Output is adjustable to provide any desired pumping rate.

When supplied with 30 to 50 psi compressed air, pump will deliver discharge heads up to 50 ft. Normal maximum suction is 10 ft, but 20-ft suction can be provided by use of special ejector. Standard construction will handle most liquids. For special conditions of corrosion or contamination, all-ferrous, Monel, Inconel and stainless constructions are available.

Ejectopumps are available in 1½, 2, 3, 4 and 6-in. sizes with capacities of 400 to 9000 gph at various suction and discharge heads. Standard flap valve construction permits handling homogenous liquids, while power-operated valve models are available for liquids containing suspended solids. Distributed by **Ferro Corp.**, Dept. P, 4150 E. 56th St., Cleveland 5, O.

For more details circle NED-21 C4 on enclosed inquiry slip

This ball bearing screw jack is only 7 inches high—can lift 15 tons 2½ inches. It weighs 22 lbs.

Designed especially for those hard-to-get-at-spots too small for a big, heavy jack—the Duff-Norton "Shorty" has made friends in shops, mills, shipyards, and on construction jobs.

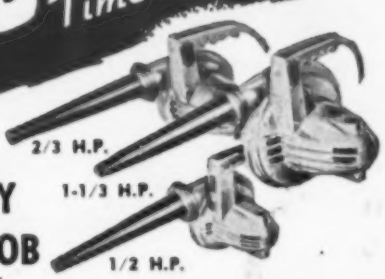
For complete specifications on the "Shorty" and other dependable Duff-Norton Journal Jacks, write the world's oldest and largest manufacturer of lifting jacks for Bulletin AD12 N, The Duff-Norton Manufacturing Company, P.O. Box 1889, Pittsburgh 30, Pa. Canadian plant—Toronto 6, Ontario.

DUFF-NORTON Jacks

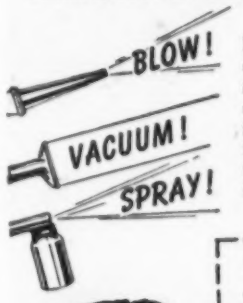
"GIVING INDUSTRY A LIFT SINCE 1883"

For more details circle NED-22 C4 on enclosed inquiry slip

IDEAL "Hand Type" CLEANERS — *Cut Cleaning Time and Costs!*



3 MODELS ...for EVERY CLEANING JOB



For easier, faster maintenance or production cleaning jobs — on machinery, stock bins, scrap pick up — there's an IDEAL "Hand-Type" Cleaner to meet your needs exactly — to save you money! Three great models, all built to rugged, real industrial standards. Get today's top cleaner value — get IDEAL!

Sold Through Leading Distributors

TRY ONE FREE!

IDEAL INDUSTRIES, Inc.
1032 Park Avenue, Sycamore, Illinois
Please give us FREE DEMONSTRATION of the IDEAL "Hand-Type" Cleaner for our plant.
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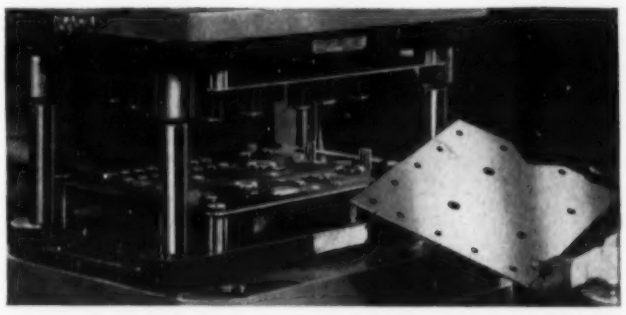
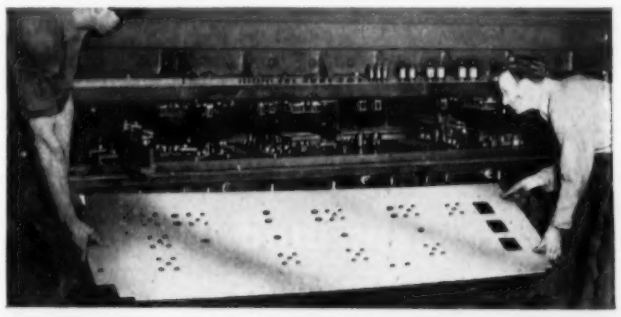
For more details circle NED-23 C4 on enclosed inquiry slip

New • Fast • Proven
LOW COST METHODS for PERFORATING and NOTCHING SHEET METALS



Whistler *MAGNETIC* Dies at work in large inclinable press. Magnetized retainers hold the units. No bolting required. A fast, economical method in making up a punch and die set for short or long runs. All parts re-usable.



Whistler *ADJUSTABLE* Dies on perforating and notching job, using Tee slotted die set. With Whistler Adjustable Punch and Die units production starts within hours instead of weeks. Last minute job changes made quickly.

REDUCE DIE COSTS... All units and parts are interchangeable and used repeatedly in different arrangements. **INCREASE PRESS PRODUCTION**—*Down time is minutes as compared to hours for changeover.* For precision work in all types and sizes of presses. **START PRODUCTION AT ONCE.** Pierce materials up to ¼" thick mild steel. Standard sizes and shapes available up to 3 inches. Special sizes to order.

Here are the complete details with prices and application illustrations. Send for these catalogs. No obligation.

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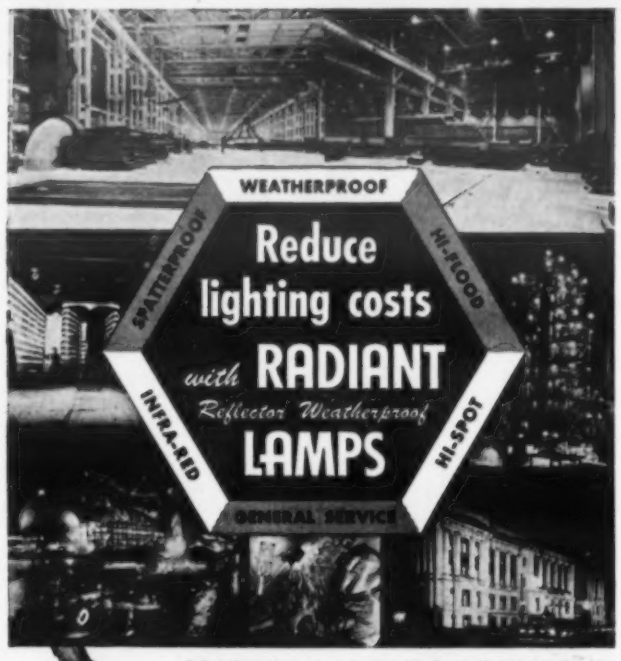
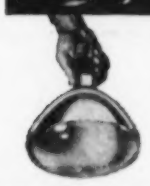
FIRM
ADDRESS
CITY ZONE STATE

S. B. WHISTLER & SONS, Inc.
Adjustable, Magnetic, Custom and Cam Dies for all Industry
750 Military Road Buffalo 23, New York

For more details circle NED-24 C4 on enclosed inquiry slip





Radiant R-type Lamps are made of special glass to eliminate premature lamp failure through breakage caused by sudden temperature changes and moisture, and are designed for rugged industrial use. No heavy, expensive enclosed fixtures needed outdoors or indoors. No reflectors to polish. Sealed-in silver reflector maintains high light output throughout lamp life. Saves power by concentrating light where needed.

Radiant Hi-Flood Lamps, 200 to 1000 W, are made for high or low bays, parking areas, and protective illumination. Radiant Hi-Spot Lamps provide a narrow beam of high intensity for extra-high bays and long distance outdoor lighting. Send for Bulletin 83.

RADIANT LAMP CORPORATION, 315 Jelliff Ave., Newark 8, N. J.

Manufacturers of Lamps from 50 to 10,000 watts for PROJECTION • SPOTLIGHT • FLOODLIGHT • INFRA-RED AERONAUTICAL • MOTION PICTURE PRODUCTION • SPORTS LIGHTING and GENERAL SERVICE

For more details circle NED-25 C4 on enclosed inquiry slip

NEW EQUIPMENT DIGEST

CCA NBP

EQUIPMENT MATERIALS • PROCESSES • DESIGNS • APPLICATIONS • LITERATURE

Penton Building, Cleveland 13, Ohio

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Designed and Built

We welcome your pump problems and inquiries. The answer to your problem may be in the files of our Engineering Department. For three generations, Brady has specialized in the design and manufacture of small Centrifugal Pumps . . . used as original equipment by leading manufacturers in Air Conditioning, Refrigeration, Dairy, Machine Tool and many other Industries.

for your Specific job

Write, phone or wire

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1005 East 18th Street Muncie, Indiana

For more details circle NED-30 C4 on enclosed inquiry slip

★ A Gear Motor for SMALL APPLICATIONS

Our line of small induction motors is designed for applications where small power can be converted to considerable torque at slow output shaft speed. Hundreds of thousands are in use today for operating relays, vending, amusement, coin operated machines, motion displays, combination rotisserie and broilers, etc.

These motors are made in three basic sizes—speeds from 1 to 200 r.p.m. with proportional torque from 5 to 500 in. ounces. Write today for descriptive information, prices and data sheet.

MotoRESEARCH COMPANY
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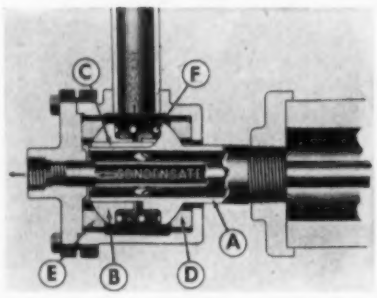
RACINE, WISCONSIN

Designers and Manufacturers of
SPECIAL INDUCTION MOTORS

★ For more details circle NED-26 C4 on enclosed inquiry slip

ROTARY JOINTS incorporate design improvements



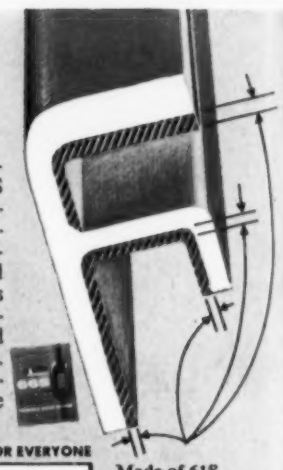
Improved design in series 2000 type J rotary joints for admitting steam and liquids into rotating rolls or cylinders results in less weight, smaller size, lower price and longer life than previous models. Joints are available both in through flow and syphon types, former calling for a joint at each end of the roll, the latter having both inlet and outlet connections combined in one. Carbon-graphite self-lubricating seal rings have increased web thickness for durability. Illustration shows a syphon type joint where A and B are rotating nipple and thrust collar, mating in a sliding fit and keyed together at C. Their surfaces seal against the carbon graphite rings D and E under initial pressure from spring F and pressure from within the joint. Made by **Johnson Corp.**, 812 Wood St., Three Rivers, Mich.

For more details circle NED-28 C4 on enclosed inquiry slip

New Harvey aluminum alloy 66S will reduce your costs

high-strength-low-cost-ratio

66S saves money by combining the high strength of 24S and the good corrosion resistance, weldability and economy of 61S. This new aluminum alloy cuts material and fabricating costs and reduces product weight. Tooling service charges are nominal and Harvey prepays the freight. Study the cost-saving advantages of Harvey 66S. Write for your Bulletin on 66S.



Made of 61S, extrusion above requires the full cross section. Using 66S saves material in shaded area, reduces costs 21%.

MAKING THE MOST OF ALUMINUM . . . FOR EVERYONE

HARVEY Aluminum

HARVEY ALUMINUM SALES, INC.
TORRANCE—LOS ANGELES, CALIFORNIA
BRANCH OFFICES IN PRINCIPAL CITIES

For more details circle NED-31 C4 on enclosed inquiry slip

For concentrated HEAT for confined areas

CHROMALOX Electric CARTRIDGE HEATERS

SAFE • EFFICIENT • EASY-TO-INSTALL

Chromalox Electric Cartridge Heaters provide dependable heat when and where you need it at the temperatures you require. Dies, molds, platens, moving parts, etc. are quickly and accurately heated to controlled temperatures required for most efficient production. Lengths up to 40", diameters ⅜" to 3½", ratings 30 to 8750 watts.

GET CHROMALOX CATALOG 50 For Complete Details

Industrial Div., EDWIN L. WIEGAND CO., 7509 Thomas Blvd., Pittsburgh 8, Pa.

See other ad on pg. 75

CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

For more details circle NED-27 C4 on enclosed inquiry slip

"Pre-Fab" Conveyors

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See this book, containing new and improved features in STANDARDIZED conveyors.

- Pre-engineered
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LOGAN CO. 215 Cabel St., Louisville 6, Ky.

Logan conveyor ADAPTO UNITS

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Ceilcrete FOR FLOORS, TANKS AND TRENCHES

A NEW ACIDPROOF COATING FOR CONCRETE

CEILCRETE surfacing provides the same protection as more costly acidproof brick in most applications. It hardens to a stone-like surface which withstands trucking, foot traffic and erosion from hot solutions and steam. CEILCRETE floors have four times the load carrying strength of ordinary concrete. CEILCRETE is easily applied by troweling to all types of concrete surfaces: flooring . . pipe, tank and trench lining . . . cement block . . . walls . . . pump bases . . . waste disposal systems. Available as materials or a complete job on contract basis.

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- ALKALIPROOF
- SOLVENTPROOF
- HIGH IMPACT STRENGTH
- ABRASION RESISTANT
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Write today for illustrated Bulletin 110

THE CEILCOTE CO.
CORROSION PROOF MATERIAL AND CONSTRUCTION

4838 RIDGE ROAD
CLEVELAND, OHIO

For more details circle NED-32 C4 on enclosed inquiry slip

WHY R-B PUNCHES

are Easier to Use

Just a push, a twist, and "click" your R-B punch or die button is accurately ALIGNED and LOCKED in place. The R-B ball lock prevents radial or vertical movement of the punch or die button in the retainer—no additional keying is required.

R-B punches and die buttons are just as easy to remove—simply insert tanged tool in retainer hole to release ball lock. Standardized and completely interchangeable in any shape or size, these easy to use punches and die buttons save your time and energy.

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ALLIED PRODUCTS CORPORATION
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Also Produced in OTHER ALLIED PLANTS
SPECIAL COLD FORGED PARTS • STANDARD CAP SCREWS
PRECISION GROUND PARTS • SHEET METAL DIES MADE OF FERROUS ALLOYS, ZINC ALLOYS OR PLASTICS

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FULLY AUTOMATIC LOADER!

LOAD-O-MATIC*

The **LOAD-O-MATIC*** is a new, revolutionary loading platform which automatically carries loads from loading dock to truck floor, whether truck is above or below dock. Can also be installed at ground level. Motion controlled by switch bar in platform and by self-leveling ramp. Completely automatic! Human element eliminated! It's the loader with the mechanical brain. Models 6000 to 20,000 lbs. Write for descriptive literature. *Pat. App. for

FIELD ENGINEERING CO. 66 FOOTE AVENUE JAMESTOWN, N. Y.

For more details circle NED-34 C4 on enclosed inquiry slip

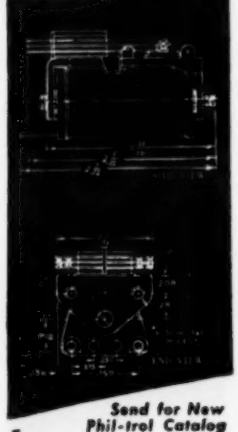
When Contact Reliability is most important...

Dependability plus high sensitivity have made this new Phil-trol relay an immediate favorite with engineers and designers. Compactness and adaptability provide new answers to problems confronting electronic and control engineers.

Features include immediate response; fast closing and opening; contact springs with twin contacts; heavy duty, long-life bronze bearings; light weight.

Like all standard Phil-trol relays, the 8QA is available in a wide range of modifications. Coils may be single or double wound, and equipped with copper slugs or sleeves for slow release or for slow operation.

Phil-trol engineering experience and design facilities are available to help you solve any new application problem.



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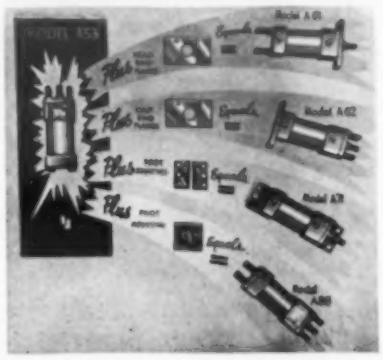
Phil-trol
IS THE REGISTERED TRADE MARK OF
PHILLIPS CONTROL CORP. • JOLIET, ILLINOIS
A THOR CORPORATION SUBSIDIARY • OFFICES IN ALL PRINCIPAL CITIES

For more details circle NED-35 C4 on enclosed inquiry slip

AIR & HYDRAULIC CYLINDERS

many models offered from stock include air and hydraulic types



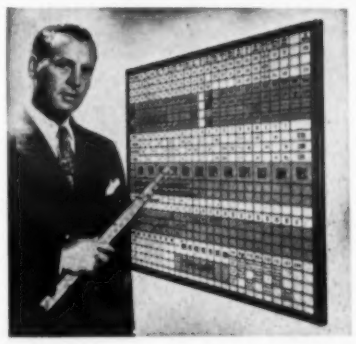
Several hundred popular combinations of bore, stroke and mounting are available from stock in line of Miller air and hydraulic cylinders. Noncushioned models available are 2, 2½, 4 and 6-in. bore air cylinders and 1½, 2½ and 4-in. bore hydraulic cylinders, each available in 2, 4, 6, 8 and 11-in. strokes. Models cushioned at both ends are 2 and 3¼ in. bore hydraulic cylinders and 2, 3¼, 5 and 8-in. bore air cylinders, each available in 3, 5, 7, 9 and 13-in. strokes.

Air cylinders are rated for 200 psi operation and hydraulic type for 2000 psi. Base model of stock cylinders is model 53 with threaded tie rods extended at rod end. Mounting attachments are available as desired, for quick conversion of this model to flange, foot or pivot mounting. Made by **Miller Fluid Power Co.**, 2002-08 N. Hawthorne Ave., Melrose Park, Ill.

For more details circle NED-36 C4 on enclosed inquiry slip

VISUAL CONTROL SYSTEM

sizes to fit specific applications for production, sales, orders, etc.



Boardmaster visual control systems are now available on special order in either larger or smaller sizes than standard to fit specific applications. New panel attachments permit greater flexibility in displaying boards, and optional colors are available. Boardmaster unit is made of aluminum and is displayed on the wall, propped on a desk or attached to a swinging wall panel for multiple units. Small grooves stamped through the metal surface at equal distances apart accommodate cards on which information is typed or written. Cards are offered in six colors and four sizes, useable singly or in combination on the same board. Standard board is 38½ x 24 in.

Boards are adaptable for visual control of such functions or operations as production, assembly, inventory, sales, purchasing, traffic, orders and budget. Board can be tailored to any need or condition. Made by **Graphic Systems**, Dept. 50, 55 W. 42nd St., New York 36, N. Y.

For more details circle NED-37 C4 on enclosed inquiry slip

If IBH* fits your plant

BIG JOE®

Solves Your Problems!

***"IN-BETWEEN HANDLING"**
Short distance hydraulic manipulation of materials too heavy for manual handling yet not requiring high priced power-driven equipment.

You can build a *fleet* of "BIG JOE" hydraulic lift trucks for the price of one power-driven unit . . . at the same time get equivalent lifting and stacking performance, guarantee of quality, selection from 40 specially "IBH-designed" "BIG JOE" 6 and 12 volt models with choice of lever, push-button or throttle controls. Write for booklet on "IBH*".

"HYDRAULIC HANDLING FOR EVERY DEPARTMENT"
BIG JOE MANUFACTURING COMPANY
908 Jackson Blvd., Chicago 7, Illinois
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For more details circle NED-38 C4 on enclosed inquiry slip

Replace Your Hammers With Air Power!

Cut Cost... Speed Up Hammer and Tool Operations with the

BIG BULLY AIR HAMMER

This 6 inch, 50 ounce Big Bully has Superior's exclusive metering trigger which delivers 0 to 9000 blows per minute.

14 Tools Available for 100 Different Jobs

Each tool designed specifically for use with the Big Bully. Blanks available for use in making tools of your own design.

- Scaling Tool
- Routing Chisels
- Flat Chisel
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- Finishing & Forming Tool
- Star Drills
- Oil Grooving Chisel
- Sheet Metal Cutter
- Panel Cutter
- Spoon Face Chisel
- Gouge
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- Wedge Driver
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15 DAY FREE TRIAL

Only you know all the operations within your firm where this tool could help cut cost and speed up production. During this 15 Day Trial period you can experiment with the Big Bully to determine whether it fills your requirements. Send request on your purchase order or write for further information to . . .

SUPERIOR Pneumatic and Manufacturing, Inc.
4758 WARNER ROAD • CLEVELAND 25, OHIO

For more details circle NED-39 C4 on enclosed inquiry slip

NEW "Lifetime" Dial Thermometers

You're *always* sure of accurate temperature readings with this new Foxboro "Lifetime" Dial Thermometer. Welded "one-piece" bulb and connecting capillary tubing of 316 Stainless Steel prevent corrosion from liquids, fumes or vapors. Needs no protective tubing. Tightly sealed 5" aluminum alloy case. Available in standard ranges to 1000°F. Easy-to-read scale 12" long. Write for details. **The Foxboro Company, 663 Neponset Ave., Foxboro, Mass., U.S.A.**

FOXBORO Reg. U.S. Pat. Off. DIAL THERMOMETERS

For more details circle NED-40 C4 on enclosed inquiry slip

Poro-Stone Filtration FOR COMPRESSED AIR

EFFICIENTLY REMOVES:

OIL, WATER PIPE SCALE

The Adams *Poro-Stone* Filter gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operation. Write for complete data—Bulletin 177.

R. P. ADAMS CO., INC.
227 E. Park Dr., Buffalo 17, N. Y.

ADAMS *Poro-Stone* AIR FILTER

For more details circle NED-41 C4 on enclosed inquiry slip

What do you know about the *Moly-sulfide* LUBRICANT?

A LITTLE DOES A LOT

You may have heard about a highly successful solid-film lubricant which is giving remarkable results in the shop and in the field.

In one 40-page booklet we have collected 154 detailed case-histories describing how difficult lubrication problems have been overcome by molybdenum sulfide. If you wish to be up to date about this solid-film lubricant, write now on your business letterhead for a free copy.

THE LUBRICANT OF MANY USES

Moly-sulfide

A LITTLE DOES A LOT

SEND FOR THIS FREE BOOKLET TODAY

Climax Molybdenum Company

500 Fifth Avenue · New York City 36 · N.Y.

▲ For more details circle NED-42 C4 on enclosed inquiry slip ▲

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Endorsed by School-Lighting Authorities

A FRIEND TO THE EYES

See Better! Work Better!

LUXO LAMP

—Acclaimed the World over as the best light to work under!

Scientifically Engineered · Ingeniously Designed · Sturdily Constructed · Flawlessly Finished

Brackets to Desk, Board, Lathe, Bench, Wall or Table (Floor Mount also Available)

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Fingertip Stay-put Control

Seamless Steel Tube Arms
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Weight 4 Lbs.

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CONSUMERS: Ask for LUXO LAMP at your nearest dealer's

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REPRESENTATIVES: Write to — Territories still open

LUXO LAMP CORPORATION
TUCKAHOE, NEW YORK

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Another money-saving Chase Packaging Product...

CHASE PROTEX BAGS

Crinkled paper (one or two walls) cemented to burlap or cotton with a waterproof barrier—formed into bags with firmly cemented seams. Gives complete protection against moisture penetration and outside contamination.

Complete information, prices, and sizes on request.

SINCE 1847

CHASE BAG COMPANY

Industrial Department: 309 W. Jackson Blvd., Chicago 6, Ill.
30 BRANCHES AND SALES OFFICES—STRATEGICALLY LOCATED

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LIGHT INTENSITY CONTROL
for photoelectric tubes and lamps

Service life of photoelectric tubes and light source lamps is considerably increased by built-in variable resistors for dimming light intensity. When installed, light beam is easily adjusted to lowest intensity that gives dependable operation for the application. This adjustment is available in light sources with straight beams and adjustable focus beams. Made by **Autotron Co.**, P. O. Box 722-D, Danville, Ill.

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THREADING MACHINE
portable unit for hand pipe tools

Weighing 75 lb, the No. 142 Featherweight Champ is a portable power drive for use with hand pipe tools. Available with either gasoline or electric power, it has a threading range of ⅛ to 2 in. Overall height, less legs, is 18¾ in. and width, less legs, is 15 in. Reversible, variable speed electric motor is rated at ½-hp continuous duty. Spindle speeds are 22 to 36 rpm, variable with load. Made by **Oster Mfg. Co.**, 2066 E. 61st Pl., Cleveland 3, O.

▲ For more details circle NED-46 C4 on enclosed inquiry slip ▲

INDUSTRIAL BENCH
has pressed wood top

Having a working surface constructed of ⅛-in. Masonite joined to its steel top by a water, oil and fatigue resistant cement, 1900 series industrial bench is designed for use in delicate or precision work. Basic bench has rigid construction, with formed electrically welded legs screwed to bolt battens welded to underside of top by double line of ½-in. carriage bolts. Back plates, end plates, shelves and drawers are optional. Made by **Industrial Bench & Equipment Mfg. Co.**, 98 South St., New Britain, Conn.

▲ For more details circle NED-47 C4 on enclosed inquiry slip ▲

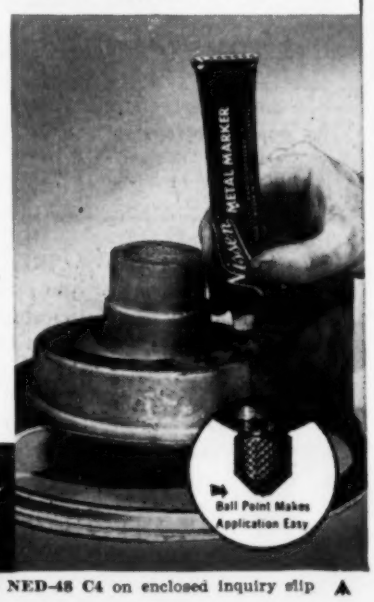
USE THE *Nissen* **METAL MARKER**

TO MAKE **ENDURING** MARKS ON **METAL, WOOD, GLASS, PLASTIC-** *Smooth* OR **ROUGH** SURFACES

The Nissen Metal Marker is a handy, easy-to-use, ball point writing tube. The special, fast drying ink in the 6" x 1" tube withstands heat and weathering and will not chip, fade, peel or rub off in general use.

$1.00 per tube

Available in seven standard colors.



JOHN P. NISSEN, JR., CO.
manufacturers
GLENSIDE, PA.

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NO LABOR COSTS— NO LABOR NEEDED!!

Let Clary record your production ...instantly, precisely, electronically!

Clary Electronic Scanning Counter (above) transmits any data to a remote, solenoid-operated Clary Digital Read-out Machine (below), only adding equipment of its kind to give you a printed tape, not a visual or uninterpreted reading.

NO HUMAN ERROR, no production slow-ups, when you put this Clary counting and recording team to work!

The Clary system delivers a continuous *printed* record of any assembly or production-line output, regardless of speed. Requires no operator or supervision. Also measures weight, bulk, or counts units in a package. Equipment is compact, fits anywhere — can even be located to count a *split* production run. Models to fit every need.

Follow the lead of other manufacturers who are saving considerable time, space and labor costs with Clary. Write us today for free literature and application information.

Clary

Electronic Data Handling for Industry, Business, Research

makers of the world's fastest and finest business machines

CLARY MULTIPLIER CORPORATION, Electronics Division, San Gabriel, California

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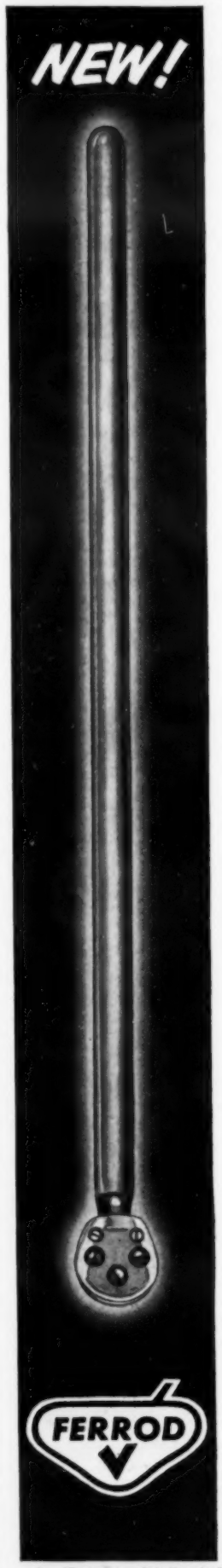

DIFFERENT!

FERROD'S NEW MONOSTRIP®

ELECTRIC HEATERS

Here are some *rod-type* units that can really take it! Highly corrosion resistant and operating at sheath temperatures up to 1500° F, these single terminal heaters are built like a steel girder to hold their shape and desired position.

•

As in other Ferrod *rod-type* heaters, the nickel-chromium resistor elements are precisely located, insulated with magnesium oxide, then flattened under tremendous pressure—forming a broad, flat heating surface with a reinforcing "spine" up the back.

•

Inconel-sheathed for long life, they are available in over-all lengths from 12" to 48" and in wattages from 350 to 2500.

•

Width of rod is ⅝" on flat side. Depth is ⅜". Heated area is normally 3" shorter than over-all length. Terminal shown is standard, but other types are available at nominal cost.

•

For further details and complete specifications on standard units quickly available, write

FERROD MFG. CO.
607 N. River St.
Batavia, Illinois

FERROD

Subsidiary FERROD *Corporation*

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do you use EXPLOSIVE FIRE-HAZARD degreasers?

NAVEE '53 SAFER!

After a recent disastrous industrial fire, a large national corporation as well as leading safety authorities throughout the country have specified a minimum flashpoint of 250° F. for solvent-emulsion degreasers. NAVEE '53 was designed to meet the demand set by these safety requirements.

HIGH FLASH POINT—250° F.

NAVEE '53 has a constant flash point of 250° F. and no fire point! A blowtorch applied to NAVEE '53 for several minutes would not ignite it! NAVEE '53 can be used for hot tank degreasing without the danger of fire, overpowering fumes or loss of active solvents through evaporation.

NAVEE '53 IN ACTION

Photo at right shows instant action of NAVEE '53 as it chemically emulsifies oil into thousands of tiny suspended droplets and causes it to mix instantly with water. NAVEE '53 goes to work in the same way on your degreasing problems. Safe, powerful solvent action penetrates the burned-on greases, oils, discolorations; then a water rinse instantly emulsifies the dirt and grease, leaving surface chemically clean.

SEND FOR FULL INFORMATION!

the PENETONE co.

Box ND 354, TENAFLY, NEW JERSEY

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Paint with ALUMINUM

When you paint your buildings and equipment with ALUMINUM, you get a host of extra values as well as added protection. You can doubly safeguard your plant investment. MD Aluminum Pigments, manufactured by the originator and first producer of Aluminum Paste, are used in the formulation of top quality Aluminum Paints by leading paint manufacturers.

If you have buildings or equipment that need paint to last a long while, write for your copy of the new ALUMINUM PAINTING HANDBOOK.

METAL POWDERS
METAL PIGMENTS
METAL ABRASIVES

METALS DISINTEGRATING CO., INC.
Elizabeth B, New Jersey

ORIGINATOR AND OLDEST PRODUCER OF ALUMINUM PASTE

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LOBDELL UNITED COMPANY

Announces **THE PURCHASE OF:**

BRIDGEPORT . . . Knife Grinders and Circular Knife Grinders

DIAMOND . . . Facing and Surface Grinders and Heavy Duty Pedestal Grinders

BRIDGEPORT . . . Abrasive Cut-Off Saws . . . this equipment formerly produced by

BRIDGEPORT SAFETY EMERY WHEEL CO.
BRIDGEPORT DIAMOND MACHINE CO.
DIAMOND MACHINE CO.

Parts and service can be supplied for all machines now in use . . . new equipment will be quoted to suit your needs. Write us for further information.

- Lobdell Paper Mill and Steel Mill Roll Grinders
- Bridgeport Knife and Facing Grinders
- Nazel Forging Hammers
- Dill Slotters
- Cold Cutting Friction Saws
- Abrasive Cut-off Saws

LOBDELL UNITED CO.
WILMINGTON 99, DELAWARE
A SUBSIDIARY OF UNITED ENGINEERING AND FOUNDRY COMPANY

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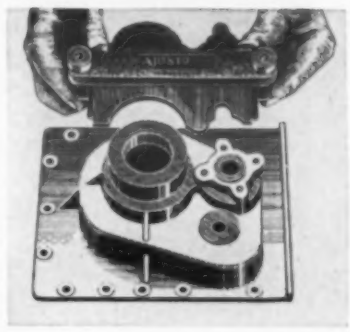
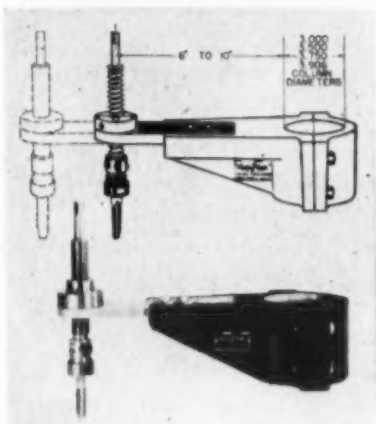
PROFILE TEMPLATE has both male and female profile



Both a male and female profile of objects 12 in. wide and with 4-in. depth of contour can be obtained in a few seconds with the 12-in. model Ajusto profile template. Adjustment and locking force is made by a right and left hand threaded member which applies pressure at both ends at one time. Template is composed of a number of very fine strips of full hard brass, each 0.010-in. thick, which adapt themselves to the exact shape of whatever medium the instrument is pressed against. Available from **Toolcraft Mfg. Co.,** Dept. 507, 531 W. Chicago Ave., East Chicago, Ind.

▲ For more details circle **NED-54 C4** on enclosed inquiry slip ▲

TAP SUPPORT ARM features adjustable slide

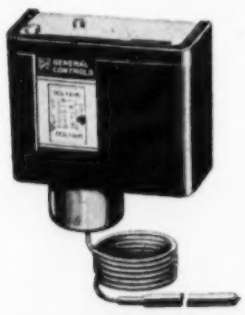


The use of 16 to 20-in. round column drill presses for lead screw tapping is made possible by adjustable slide of this 500 series support arm designed for Auto-tap lead screw tapping attachments. Support arm is available in several models to fit different column diameters. Two sizes are made for Auto-tap ½-in. and 1-in. diameter lead screws, ranging from 80 to 11 pitch for No. 0 to ⅝-in. taps. Lead screws for support arms are hardened and ground, and split nuts are precision cast and have adjustment for fit and wear takeup. Jacobs Rubberflex collet and nut align tap, and floating lock assembly assures positive drive. Made by **Automatic Methods, Inc.,** Div. 153, 965 W. Grand St., Elizabeth, N. J.

▲ For more details circle **NED-55 C4** on enclosed inquiry slip ▲

DO YOU KNOW? Heretofore supplying only electrical equipment for marine applications, this company is now entering the industrial field and has introduced a line of electrical relays. Sensitive relays have controlled contact pressure, resist normal vibration and shock, and are designed for fast reliable operation. Relays can be engineered for practically any industrial requirement. Service offered by Henschel Corp., Relay Div., Amesbury, Mass.

▲ For more details circle **NED-56 C4** on enclosed inquiry slip ▲



temperature control

for commercial and industrial installations

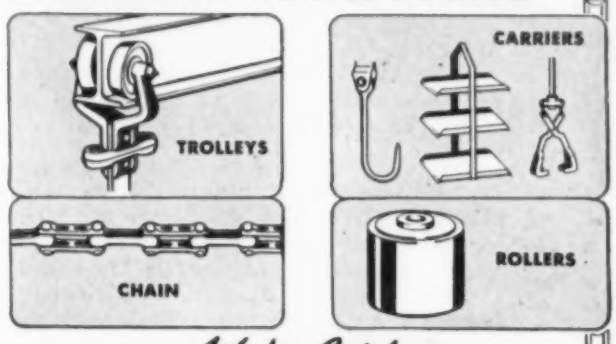
General Controls L-59T Temperature Controls for magnetic and motor-operated valves, heating or cooling units, electric heaters, signal lights and relays are built for strenuous service. Rugged and dependable, these reliable controls are made in either single-pole or double-pole construction. Operating in any position and unaffected by vibration, L-59T Temperature Controls are ideal for heavy-duty automatic regulation of many industrial applications.

GENERAL CONTROLS
Glendale, California • Skokie, Illinois
Manufacturers of Automatic Pressure, Temperature Level and Flow Controls for Heating, Home Appliances, Refrigeration, Industrial and Aircraft Applications.

FACTORY BRANCHES IN 35 PRINCIPAL CITIES
SEE YOUR CLASSIFIED TELEPHONE DIRECTORY

▲ For more details circle **NED-57 C4** on enclosed inquiry slip ▲

WEBB CONVEYOR EQUIPMENT, PARTS and ACCESSORIES



Ask for Catalogs

No. 50—Trolley Conveyors
No. 51—Floor Type Conveyors
No. 52—Power & Free Conveyors
No. 453—Hand Pushed Trolleys, etc.

JERVIS B. WEBB CO.
Conveyor Engineers and Manufacturers
8921 ALPINE AVE. • DETROIT 4, MICH.
Offices In Principal Cities

▲ For more details circle **NED-58 C4** on enclosed inquiry slip ▲

A First

NOTHING LIKE IT EVER BEFORE . . .

The first fully automatic, electrically operated pressure-sensitive tape dispenser. Automatically cuts and dispenses pre-determined lengths of any type pressure-sensitive tape.

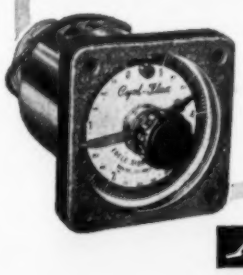
For production lines and shipping rooms
Taping speed tremendously increased
Taping costs cut sharply
Dispenses tape ½" to 3" wide, ⅞" to 18" in length
Machine will feed tape to many operators
Literature and further information available

PENN TAPE SAVERS
D AT LUZERNE STREET, PHILADELPHIA 24, PA.

▲ For more details circle **NED-59 C4** on enclosed inquiry slip ▲

. . . look to Timing . . . when profits are threatened

If your employees and machines are already working at their peak, Automatic Timing may be your answer to greater profit. Electrical controls held constant by an automatic timer, will produce a uniform product, stop rejects, and increase production. Let experienced engineers suggest the right timer for your individual process.



Send for FREE booklet

Industrial Timers by **EAGLE**

EAGLE SIGNAL CORPORATION
Moline, Illinois

▲ For more details circle **NED-60 C4** on enclosed inquiry slip ▲

Be fresh Stay fresh

wear a DUPOR No. 40

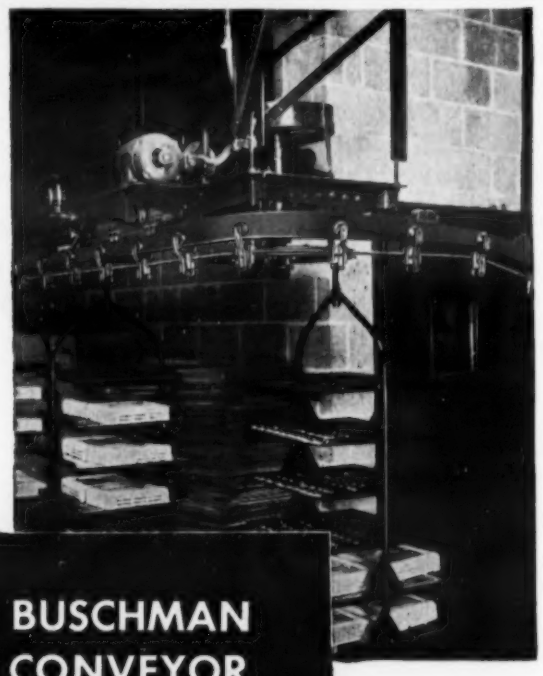
THE RESPIRATOR THAT IS U. S. B. of M. APPROVED FOR TYPE "A" DUSTS

Guards against pneumoconiosis and silicosis producing dusts. Has over 40 sq. in. twin filter area. Sanitary face cloth. Soft rubber face mask. "Controlled-breathing" valves. Wearer has a panorama view with no blind spots. Unusual rubber, felt and plastic construction makes it extra durable, no denting or bending possible. Efficiency remains unimpaired even after rough treatment.

Sample sent $3.00 PP

H. S. COVER
South Bend, Ind.

For more details circle NED-78 C4 on enclosed inquiry slip



BUSCHMAN CONVEYOR strikes new note IN PRODUCTION at NuTone, Inc.

continuous handling of 50,000 parts daily!

This manufacturer's production suffered from aisles jammed with parts trucks, excessive manual handling, wasted space. A large inventory was required.

Now, Buschman "Universal" Overhead Trolley Cable Conveyor provides live storage space overhead, cuts parts handling to a minimum and significantly reduces inventory in process.

Using Buschman Cable Conveyor stock parts, you, like Nutone, can get a "custom installation" quickly and at low cost. Let Buschman suggest a time, money and space saving solution for your handling problem. Write today for details.

THE E. W. BUSCHMAN CO.
4482 Clifton Ave.
Cincinnati 32, Ohio
Canadian Licensee:
James A. McKechnie, Ltd.
Toronto 13, Canada

PRODUCE MORE ... FOR LESS on Buschman Conveyors

For more details circle NED-79 C4 on enclosed inquiry slip

PRESSURE-SENSITIVE SIGNS
applied where action is required

"Point of Action" signs for various applications are self-sticking and applied right at place where action is required. Sign illustrated implies that electricity costs money and should not be wasted. Signs measure 1 x 2¼ in., are printed with bold black letters on bright yellow background and can be applied to light switch cover plates or pull cords without moistening. Nine individual signs are mounted on handy Brady dispenser card. Made by **W. H. Brady Co.**, Dept. NED, 727 W. Glendale Ave., Milwaukee 12, Wis.

For more details circle NED-80 C4 on enclosed inquiry slip

SMALL PARTS CLEANER
design improvements incorporated

An inproved drying chamber with a thermostat to prevent overheating and heavier tempered glass parts jars are principal design improvements made in this industrial parts cleaning machine (*NED, May* '51). The thermostat cuts off heater current should the fan stop functioning. Machine has centrifugal action cleaning basket which keeps parts stationary and prevents damage to them during the cleaning cycle. Ball bearing motor is a reversible 10:1 gear reduction type. Each glass work jar has a 1½-gallon capacity and is mounted on splash pans to prevent damage to machine from spilled cleaning solutions. Made by **L & R Mfg. Co.**, Dept. NE, 577 Elm St., Arlington, N. J.

For more details circle NED-81 C4 on enclosed inquiry slip

DO YOU KNOW? The latest techniques recommended for the brazing of aluminum and its alloys are clearly demonstrated in 22-minute 16-mm sound-color motion picture which is available on loan basis for industrial showings. Movie not only explains what can be done in joining parts by brazing, but shows how to do it. Torch, furnace and dip brazing methods are shown. For prints, write to Aluminum Co. of America, Motion Picture Section, 854 Alcoa Bldg., Pittsburgh 19, Pa.

For more details circle NED-82 C4 on enclosed inquiry slip

"ball-lok" V-Belt Clutch

3 JOBS DONE BETTER with a BALL-LOK CLUTCH

HERE are just three of the many clutch problems Ball-Lok Clutches can solve for you:
- Vari-drive motors and speed reducers—
- Intermittent or hi-rate per hour engagements—
- All hi-speed V-belt drives—

Ball-Lok Clutches have no friction plates, no internal wearing parts. They release instantly—cannot grab. They have a light smooth clutching action on the belt. They increase belt life. Ball-Lok Clutches are compact, light weight, easy to install. They come complete with pulleys from fractional to 10 hp.

Send Your Clutch Problems to Us

V-Belt Clutch Co.
418 NO. WESTERN AVE., LOS ANGELES 4, CALIF.

For more details circle NED-83 C4 on enclosed inquiry slip

SPACE-SAVER CONVEYOR

- All steel construction
- No belts—will operate in limited space and under conditions no other type can operate
- Lower maintenance cost
- Lower installation cost

FLOOR-TO-FLOOR CONVEYOR

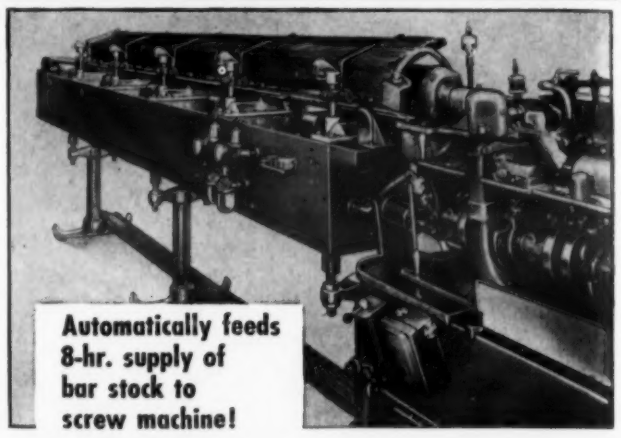
CONVEYORS

- Manufactured with and without benches in different widths, lengths and capacities to meet your individual requirements.

Also manufacturers of hamper conveyors and ship-loading conveyors.

WEHLE CONVEYOR COMPANY
201-203 WATER STREET • BINGHAMTON, N. Y.

For more details circle NED-84 C4 on enclosed inquiry slip



Automatically feeds 8-hr. supply of bar stock to screw machine!

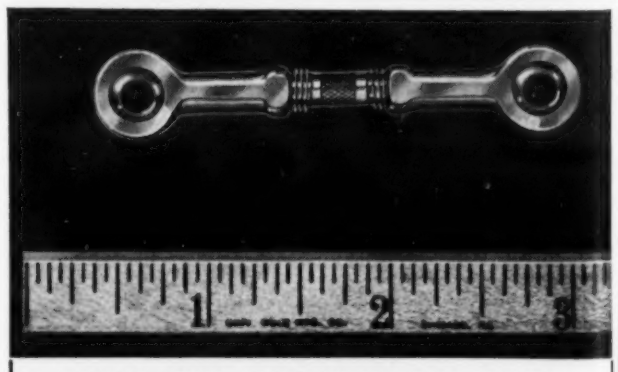
LIPE AUTOMATIC MAGAZINE-LOADING BAR FEED

- Feeds stock to screw machine *all the time* — not dependent on operator.
- Cuts cycle time — *guaranteed* to attain at least 90% of machine's gross geared production capacity.
- Eliminates feed fingers — multiple feed finger feed-outs — feed finger adjustments and replacements. No jamming of remnants.

Lipe's AML Bar Feed is today's big advancement in screw machine stock feeding. Get full details — send today for 4-page folder, name of nearest distributor.

Lipe-ROLLWAY CORPORATION
Manufacturers of Automotive Clutches and Machine Tools
Syracuse 1, N. Y.

For more details circle NED-85 C4 on enclosed inquiry slip



BALL END CONNECTING RODS
For Industrial Applications

MANY industrial applications are found for these precision built connecting rods. Used as machinery linkage or on both single and twin carburetors of any butane or gascline engine.

Avalon Connecting Rods come equipped with spring lock adjustment or lock nut. Rod ends are furnished in sets with right and left hand threads. Perfect alignment is assured by ball and socket bolt holes. Greatly increases motor efficiency, specially where dual carburetors are used by providing close adjustment.

Sizes: Bolt holes 3/16" thru 5/16".
Lengths from 2⅞" bolt center up.

Priced from $1.50 a Set Up — Quantity Discounts

Write for Folder

AVALON MACHINE PRODUCTS, INC.
2535 E. Imperial Highway, Los Angeles 59, California

For more details circle NED-86 C4 on enclosed inquiry slip

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Cleveland, Ohio

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Principal Products Manufactured .....

.....Approximate Number of Employees in Plant.....

Also send NEW EQUIPMENT DIGEST free to the following men in our company:

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To obtain additional information on any items in this issue of NEW EQUIPMENT DIGEST, circle numbers below which correspond with those of the desired items. Your request will be forwarded promptly to the manufacturer. Please give your name, title, company and address. This postage-free mailer should be folded as indicated for mailing.

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C-4

NAME ..... TITLE .....

COMPANY .....

ADDRESS .....

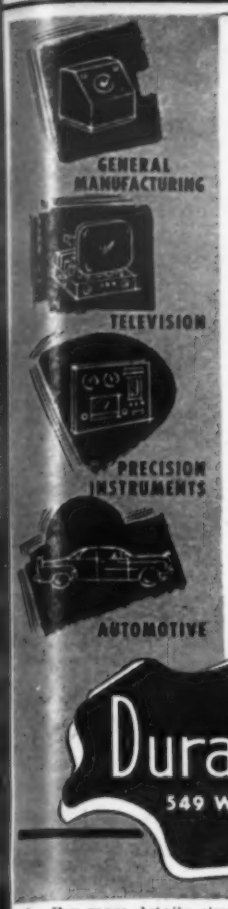
CITY ..... ZONE ..... STATE .....

Principal Products Manufactured .....

..... Approx. Number of Employees in Plant .....

Check Invested Capital Rating of Your Company

- ☐ Over $1,000,000
- ☐ $500,000 to $1,000,000
- ☐ $200,000 to $500,000
- ☐ $75,000 to $200,000
- ☐ Under $75,000



YOUR BEST SOURCE FOR

Fabricated

SPONGE RUBBER

We Have . . .

- The largest assortment of fabricated sponge rubber in the midwest . . . all thicknesses . . . all densities.
- Facilities for die cutting — slitting — punching.

In Addition . . .

We are specialists in applying pressure sensitive and dry-back adhesives of varying strengths to suit your needs.

INCREASES OUTPUT
SAVES LABOR

Durable RUBBER PRODUCTS CO.
549 West Fulton, Chicago 6, Ill.

▲ For more details circle NED-87 C4 on enclosed inquiry slip ▲

IS YOUR FILTER PROBLEM

baffling?

H_2SO_4 Hydrogen Peroxide
Fuming HNO_3 Molten Na or K
Caustic Cl_2

OR IS IT **manageable?**

Water Air Gasoline, etc.

MMC offers permanent filter media engineered for optimum efficiency in handling countless exposure conditions, some of which are mentioned above.

For further information request bulletin 40 F

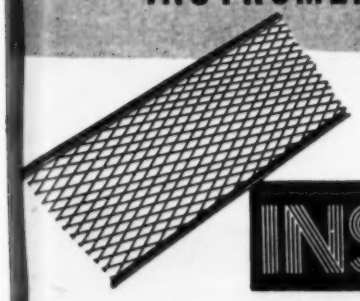
Another filtration engineering service of

MICRO METALLIC CORPORATION
36-A Sea Cliff Ave. Glen Cove, N. Y.

PALL
The Pall Filtration Companies
Micro Metallic Corporation | Porous Plastic Filter Co. | Aircraft Porous Media, Inc.

▲ For more details circle NED-88 C4 on enclosed inquiry slip ▲

for THE SUPPORT OF INSTRUMENT TUBING



INSTROF

Instrof is a standard system of expanded metal trough, manufactured specifically for the support of instrument tubing. It is made up of prefabricated sections and fittings which enable it to be quickly and easily erected at the job site to conform to almost any layout. Maintenance is negligible, since all parts are hot dip galvanized.

For further information—write today for Bulletin 3D.

INSTROF INCORPORATED
4923 PENTRIDGE ST. • PHILADELPHIA 43, PA.

▲ For more details circle NED-89 C4 on enclosed inquiry slip ▲

TAPE DISPENSER & SLITTER
for cellophane tape up to 1-in. wide

Combined slitter and dispenser for Cellophane tape has a calibrated gage permitting accurate control of tape lengths up to 4 in. and handles tapes up to 1-in. wide. Designated model T 5E Texcel, it will dispense two strips of tape of predetermined length in one operation, and one or both pieces can be pulled from the machine as desired. An over-ride permits withdrawal of unmeasured tape in any length. Slitter attachment is enclosed to eliminate danger of operator being cut, and an extra blade is taped inside machine's base. Dispenser is suitable for use in any manufacturing or packaging application where tape strips in a set length are used repeatedly. It weighs 6¾ lb. Made by **Permacel Tape Corp.**, Dept. R, New Brunswick, N. J.

▲ For more details circle NED-90 C4 on enclosed inquiry slip ▲

PORTABLE HEATER
oil-fired unit has electric blower

Quick heat on construction jobs, thawing engines of mobile equipment, and providing emergency heat during repairs are typical uses for this portable oil-fired heater. Mounted on wheels, it can be moved to any desired location readily. Heat is distributed uniformly by an electrically operated blower at the output end. Combustion chamber is Armco type 430 stainless, and Aluminized steel is used for the heat exchanger. Made by **Lennox Furnace Co.**, 1711 Olentangy River Rd., Columbus 8, O.

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DO YOU KNOW? A new series of human relation training films for foremen is now available. One shows how a foreman learns to value and respect the feelings of his workers. Another depicts the various methods foremen can use to correct worker's faults without incurring ill will. Third film illustrates how supervisors should give orders so that they are understandable and can be carried out efficiently by the worker. Films run 12 minutes each and are available in 16-mm sound movies as well as 35-mm sound slide films. For prices, write to the National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

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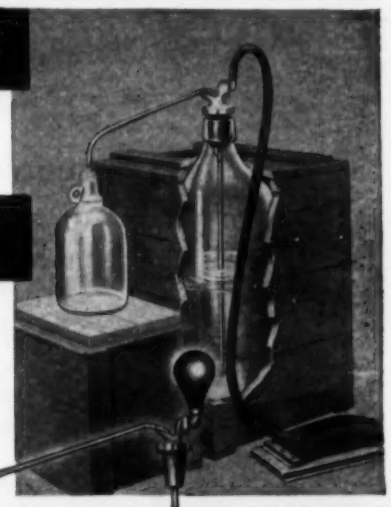

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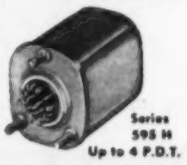
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POCKET-SIZE SLIDE RULE with A, B, C, D and CI Scales

This handy pocket-size slide rule made of heavy-gage plastic and with transparent runner carries the most used A, B, C, D and C1 scales. Slider, also useful as ruler, has one edge calibrated in sixteenths, the other in millimeters. Reverse side of slider bears Ohm's Law formulas and a Fahrenheit-Centigrade conversion scale. Offered free by **Helipot Corp.**, 916 Meridian Ave., South Pasadena 31, Calif.

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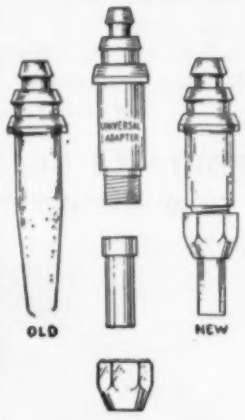
WELDING TIP & ADAPTER eliminates constant tip replacement



Need for constant welding tip replacement is eliminated through use of the Universal adapter and welding tip. Adapter becomes part of the welding torch, with tip being only part requiring replacement. Savings can be effected by reducing number of tip replacements as well as reducing amount of gas and oxygen consumed. Cutting tip ends are interchangeable and will fit any cutting torch with the use of its adapter. Made by **Evans Machine Co.**, 122 S. Calverton Rd., Baltimore, Md.

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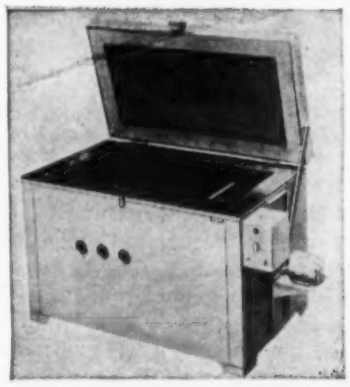
TEMPERATURE TEST CHAMBER tests over wide temperature range



Operating characteristics of components for aircraft and other parts and devices can be evaluated under conditions of both heat and cold by this temperature test chamber. It has a temperature range of −100 to 300° F, usable working volume of approximately 12 cu ft and dual thermostats for high and low temperature control. Features include stainless steel interior, motor driven fan for air circulation, full opening counterbalanced lid and 5½ in. of glass wool insulation. Block dry ice is used as the refrigerant. Made by **Mantec Inc.**, Dept. NED, El Segundo, Calif.

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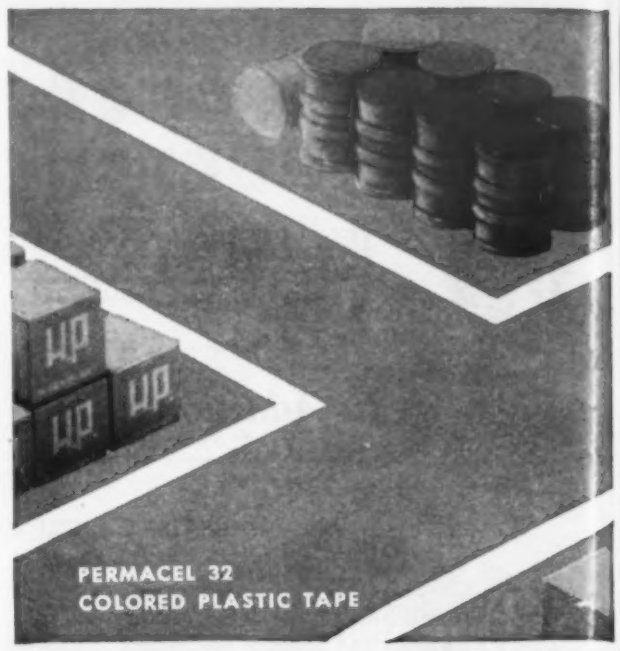
For Aisle Marking



PERMACEL TAPES

Find out how you can use pressure sensitive tape... write Permacel Tape Corporation, New Brunswick, N.J.

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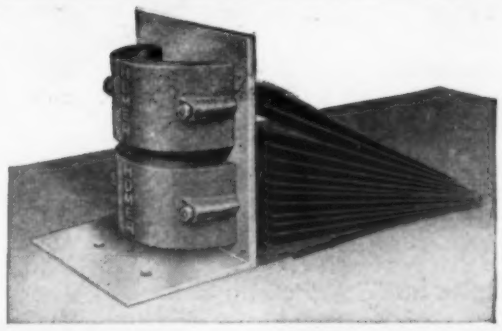

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WITH HOMER MAGNETIC SHEET FLOATERS

Homer magnetic sheet floaters make it easy to handle irregular or odd shaped stacks of steel sheets. They eliminate danger to the operator due to sharp edges . . . they speed up handling time by continuously floating the top sheets, as the sheets are removed. They prevent double feeding, protecting dies and machinery. Oily, polished or painted sheets are handled without prying, scratching or marring the surfaces.

Homer magnetic sheet floaters are constructed with cast frames, to which powerful Alnico V permanent magnets are attached. Frames may be clamped or bolted into operating position.

Homer magnetic sheet floaters are available in three sizes to handle sheets from 14 mil stock to ¼" plate. Multiple units can be used when necessary.

Write for bulletin and prices. Deliveries—immediate!

THE HOMER MANUFACTURING CO. INC.
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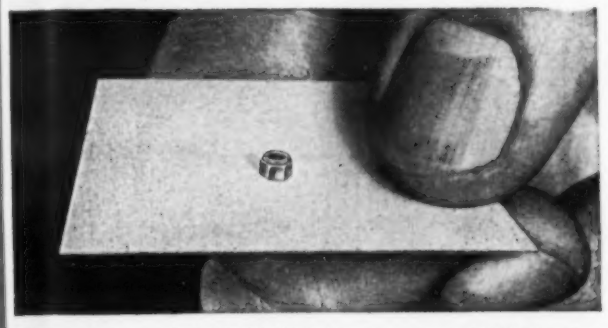
Miniature ELASTIC STOP® nuts down to 0.109" across flats



NOW, miniature ELASTIC STOP nuts are available in sizes #0 through #4 in both SAE fine thread and USS coarse series—for special applications, such as electronics equipment and instruments. Smaller than any other self-locking nut they maintain a precise adjustment whether tightened against a seating surface or positioned at any point on a threaded member.

Nylon inserts make them self-locking, vibration-proof and re-usable, like all ELASTIC STOP nuts. They are simpler and less expensive to assemble than double nuts or soldered units.

WRITE FOR design information on Miniature Nuts and other special and standard ESNA fasteners. Address Dept. N38-337.

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2330 Vauxhall Road, Union, N. J.

DESIGN HEADQUARTERS FOR SELF-LOCKING FASTENERS

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THE INSIDE STORY TO EFFICIENT DUST COLLECTING WITH A CYCLONE SEPARATOR BY

TORIT

Here's a cut-away view of a cyclone type Torit Dust Collector. Dust laden air spins downward with centrifugal action forcing nearly all the dust to drop into the bottom reservoir. What little escapes moves up the center to be exhausted, either outside or to an after-filter bag.

Cyclone type Torit Dust Collectors trap up to 95% of the dusts . . . even lints from rag buffing wheels. To this efficiency you can add other savings . . . a minimum of piping to reduce friction losses and running times that coincide with the work being done.

Torit Dust Collectors in cyclone or cabinet types can solve your dust problems, protect working conditions and employees' health. For complete information write:

TORIT DOOR FASTENERS...The sturdy and efficient door fastener used on Torit cabinets is available for use on your products. Strike plate either flat or angular. Write for quantity prices.

TORIT MANUFACTURING CO.
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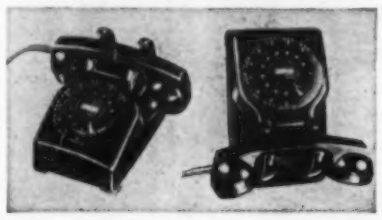
MASONRY DRILLS
new thread design speeds drilling

Rolled thread spirals on ⅜ through 1-in. diameter rotary Konkrete Kore drills increase the speed of drilling masonry material. Design has a spiral for each carbide cutter insert (six in the 1-in. drill illustrated), the multi-spiral slope thread acting to clear the hole more rapidly than previous models. Cold forging process improves the wearing qualities of the drill bodies. In other respects the drills are the same as others in the 3/16 to 12-in. range with core slot. Made by **Tilden Tool Mfg. Co.,** Dept. NED, 209 Los Molinos, San Clemente, Calif.

▲ For more details circle NED-110 C4 on enclosed inquiry slip ▲

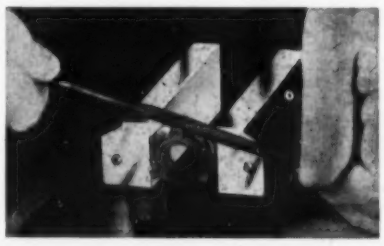
TELEPHONE
for either wall or desk use



By turning the dial so that the numbers are the right way up, series 700 telephone can be used either as a desk or wall mounted unit. Hookswitch and saddle arrangement prevent handset from falling when used in the wall mounting style. This series also has a shorter handset than previous models, which brings the transmitter ½-in. closer to the user's mouth, resulting in about a 5 decibel transmission gain. Flexible circuit design makes instrument adaptable to every type of service in industry and commerce. Numbers and letters are located outside the dial for improved visibility. Made by **Leich Electric Co.,** 427 W. Randolph St., Chicago 6, Ill.

▲ For more details circle NED-111 C4 on enclosed inquiry slip ▲

VISE JAW PLATES
protect soft materials



Designed to prevent soft and finished materials from being marred by vise jaws, Nava-Mar face plates are made in ¼-in. sizes to fit standard vises up to 6-in. They are attached and detached by set screws and are accurately machined for use on precision work. They are available in a variety of materials including bronze and aluminum and with fiber or babbitt facings bonded to aluminum bodies. Made by **Kenimar Corp.,** Dept. NED, 2 Oak Ridge St., Greenwich, Conn.

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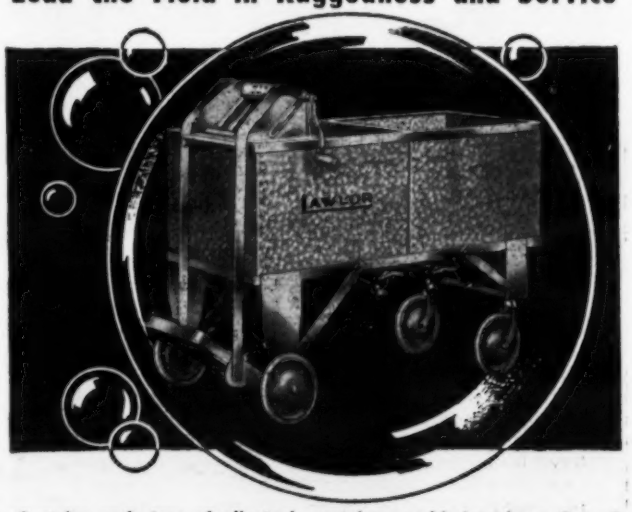
Lead the Field in Ruggedness and Service



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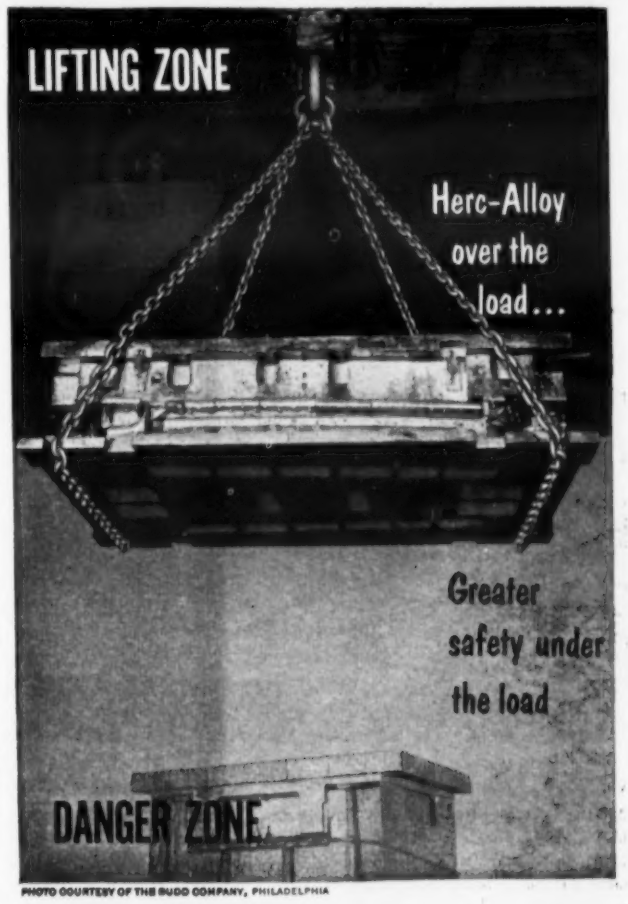

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HERC-ALLOY ...is the original alloy steel chain

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Model "SP" ROTARY
Alaska Gray and Seal Brown

The DURANT "SP"
Predetermined Counter
(CLOSES SWITCH AT END OF PRE-SET COUNT)

PREVENTS COSTLY OVERRUNS

This SMALL, COMPACT Productimeter has hundreds of applications in all phases of industrial production. Make exact production runs to any predetermined count you set.

Extremely rugged, fast and accurate the "SP" Productimeter will eliminate wasteful over- or under-runs. It will turn on a light, ring a bell or stop the machine. Available in ROTARY or STROKE models.

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Count Everything

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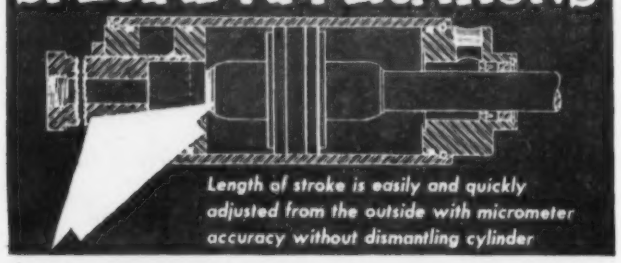
standard O-M CYLINDERS air hydraulic

easily and quickly modified to fit

SPECIAL APPLICATIONS



Length of stroke is easily and quickly adjusted from the outside with micrometer accuracy without dismantling cylinder

You don't pay for special patterns . . . and you don't have to use a cylinder that's not quite "right" for the job when you choose the O-M Cylinder. Since nearly all parts are standardized in O-M Cylinders (plus one or two semi-standard parts), the additional cost is extremely small when you need a duplex, triplex, adjustable-stroke, tandem—or any other "special" type cylinder for applications not suited to standard units.

fit where others won't!

O-M Cylinders require ⅓ *less installation space* than conventional cylinders of the same bore because O-M's SPECIAL INTERLOCKING MECHANISM does away with projecting tie rods and end caps. Also provides better balance, reduces distortion . . . giving O-M the *lowest coefficient of friction of any cylinder.* End plugs tapped for universal mounting. Any one or combination of mounting brackets may be used to install without disassembling or changing cylinder. Easily removed, inspected, repaired. ALL-STEEL with bearing bronze—no castings.

Available in a full range of sizes (1½ to 8" bores) with standard, 2 to 1 or oversize rods. Completely interchangeable parts.

Write today for FREE catalog and complete set of ½- and ¼-scale templates showing all cylinders and mounting brackets.

14 day delivery on most sizes

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City.....Zone.....State.....

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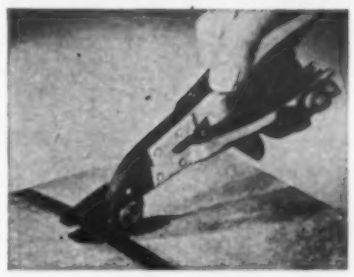
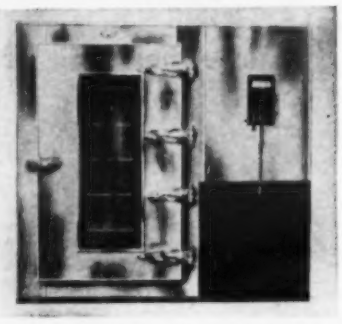
STEEL STRAP CUTTER
tool steel blades can be resharpened



Strapping up to ¾ x 0.035-in. can be easily cut with a smooth, straight edge by the No. 502 strap cutter. It weighs less than 1 lb and is balanced to fit the hand. Precision ground tool steel cutting blades which can be resharpened are held apart by spring tension for ready use. Made by **A. J. Gerrard & Co.,** 1954 Hawthorne Ave., Melrose Park, Ill.

▲ For more details circle NED-118 C4 on enclosed inquiry slip ▲

TEMPERATURE TEST CHAMBER
30 cu ft unit has wide range



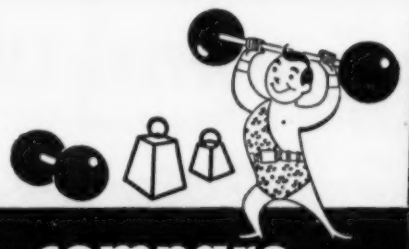
Designed for large capacity testing over a temperature range from −40 to 200° F, model A-30-40FH temperature testing chamber has a 30 cu ft capacity. Features include visible type controller, multipaned visual port and aperture for connections to inner chamber. Unit is of stainless steel construction insulated with fine fiber glass. Made by **Webber Mfg. Co.,** Dept. 203, 2740 Madison Ave., Indianapolis 3, Ind.

▲ For more details circle NED-119 C4 on enclosed inquiry slip ▲

MAGNETIC RELAY
for capacitor-start motors

Compact magnetic relay is designed for use with single-phase capacitor-start motors requiring a voltage-sensitive relay to disconnect start winding or reduce capacitance when motor approaches full speed. Designated class 8505 type C, unit is assembled on a molded phenolic base and is 2 11/16-in. high, 1 15/16-in. wide and 2⅓-in. deep. Clapper-type magnet has permanent air gap, knife-edge bearing, ground sealing surfaces and heavy shading coil. Double-break silver-to-silver contacts handle up to 50 amp on 115-v motors and 35 amp on 230-v motors. Magnet coils are available for continuous duty ratings up to 480 v 60 cycle or 300 v, 25 cycles. Made by **Square D Co.,** 4045 N. Richards St., Milwaukee 12, Wis.

▲ For more details circle NED-120 C4 on enclosed inquiry slip ▲



compare the strength...

...of a Hackney Deep Drawn Shape such as this with an awkward cast, forged or welded pipe part which it might replace on your present line—and compare the savings in weight. You'll find that lightweight Hackney Parts often enable designers to shave off pounds without any sacrifice in strength, vibration resistance or durability.

Hackney Deep Drawn Shapes and Shells have been designed in many sizes and shapes—in capacities from 1 quart to 150 gallons. They can be produced to close tolerances. Seamless contours and extra smooth surfaces often improve product appearance. Write for further information.

Pressed Steel Tank Company
Manufacturer of Hackney Products
1450 S. 66th Street, Milwaukee 14

Hackney MILWAUKEE

CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

▲ For more details circle NED-121 C4 on enclosed inquiry slip ▲

Which of these Materials Needs More Efficient Handling in Your Plant?

Abrasive solids and chemicals in suspension • Silt Slag • Acid slurries and sludges • Caustic liquors Residue from filters and classifiers • Washery solids Milk of lime • Coal • Tailings • Ore concentrates Soda ash • Cement and glass sand slurries

Delivered 'round-the-clock (with fewer breakdowns) by

MORRIS TYPE R SLURRY PUMP

Longer uninterrupted service because:
- No internal studs to cause leakage
- Low pressure stuffing box practically eliminates packing troubles
- Impeller and liner removed without disturbing piping
- Moving parts available in various corrosion/abrasion-resistant alloys

Specifications and operation data on request. No cost — no obligation.

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Representatives in Principal Cities

MORRIS Centrifugal Pumps

▲ For more details circle NED-122 C4 on enclosed inquiry slip ▲

NEW TO INDUSTRY "UNITED" BURRING MACHINE

Deburrs • Grinds • Contour-Polishes

INSIDE-OUTSIDE SURFACES at the Bench!

SINGLE OR DOUBLE ARMS ADJUST CLOCKWISE TO 12 DIFFERENT OPERATING POSITIONS
BELT SIZE 42" x 1"

Faster, cheaper, better than hand filing. United gets into corners, angles follows curves and irregular surfaces. Works inside openings over 1¾".

Backing platen cushioned with webbing to save wear on abrasive belts. Idler pulley (Approx. 1¼" diam.) is rubber covered to use as contact wheel. Uses any abrasive. Five models, 1/3 or ½ H.P., A.C. 110 V. —1750 and 3450 R.P.M.

Money-saving Machine for Aluminum Die Casts, Metal Parts, Steel, Plastics, Wood, Molded Rubber—For tool and die work, pattern making, precision finishing and similar uses.

FOR PRICES AND SPECIFICATIONS WRITE FOR FOLDER NO. 54

Territory Available To Responsible Mfr. Agents

United Machine Tool Co.
1930 Nelson St., S.E. Grand Rapids 7, Mich.

▲ For more details circle NED-123 C4 on enclosed inquiry slip ▲

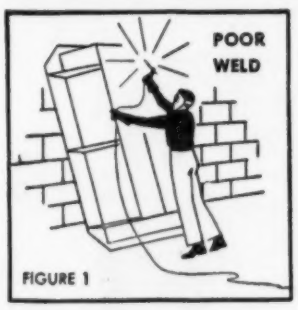


FIGURE 1

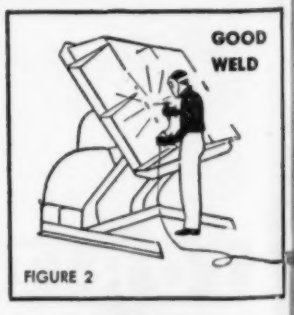


FIGURE 2

How Worthington Welding Positioners help your welders produce BETTER WELDS

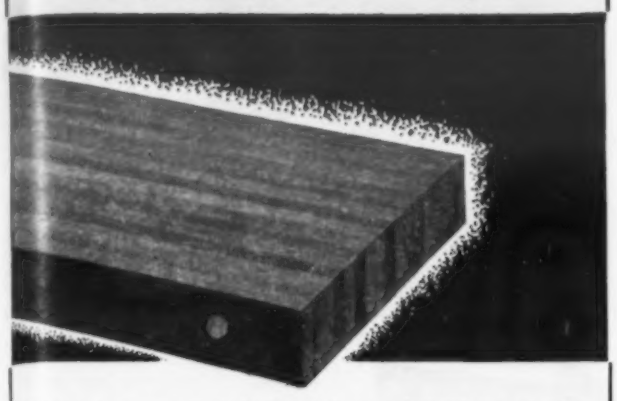
When your welder has to climb over, prop, or flop the work, he's wasting time and can only obtain good downhand welding over a limited area (Figure 1). With a Worthington Welding Positioner, the work is quickly tilted or rotated automatically into position for correct downhand welding. Write for Bulletin 210D. Worthington Corporation, Positioning Equipment Div., Plainfield, N. J.

Y.2.5

WORTHINGTON
Welding Positioners—Turning Rolls

▲ For more details circle NED-124 C4 on enclosed inquiry slip ▲

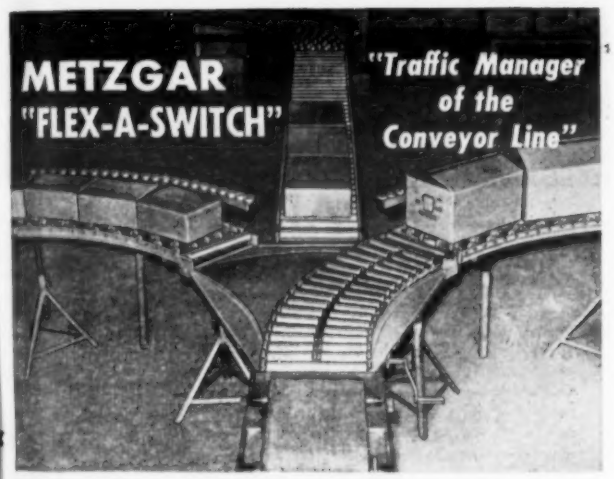
LAMINATED BENCH TOPS
edge grained hard maple



Tolco tops are manufactured from select pieces of edge grained, hard northern maple. Narrow ¾" maple laminations are electronically glue welded into a homogeneous solid mass. Twice as many laminations, twice as much adhesive means maximum wearability with minimum moisture absorption and warpage. Reinforced with concealed steel tie rods. Finished with non-toxic sealers and lacquers. Tolco tops save on tools and assembly parts. Sizes range from 1¼" to 3" thick, up to 12 feet long and 36" wide. Write for complete information and prices.

THE TOLERTON COMPANY
P.O. Box G658 — Established 1894 — Alliance, Ohio

▲ For more details circle **NED-125 C4** on enclosed inquiry slip ▲



Gets maximum efficiency from your conveyor system.

Ideal for switching production lines to various machines for isle system warehousing, assembling orders and all gathering and distributing uses.

Standard Widths:
11½", 15", 18"
Through & 45° R & L.
Spur Switch: 45° R. or L. & Through.

May be furnished with electric or pneumatic Remote Control.

● WRITE FOR PRICES ●

METZGAR CONVEYOR CO.
416 Douglas N. W.
MFRS. OF WHEEL & ROLLER GRAVITY & LIVE ROLLER CONVEYORS • POWER BELT CONVEYORS • SWITCHES • ACCESSORIES & REEL DOLLIES
GRAND RAPIDS 4, MICH.

▲ For more details circle **NED-126 C4** on enclosed inquiry slip ▲

Wheels, sticks, Rods and Blocks for machine and manual operations.

The Biggest PAY OFF...
The Winning FINISH!

IN TODAY'S KEENER COMPETITION, IT'S THE FINISH THAT SELLS! SELL MORE—SAVE MORE—with Brightboy. Achieve finishing time savings up to 50%! Brightboy gives you finer, faster burring, cleaning, finishing, polishing, IN ONE OPERATION—on ALL METALS, PLASTICS, and LAMINATED MATERIALS. Brightboy's *combination-action* of "cushioning" rubber and matched abrasive do the job! You get time-saving applications far beyond other methods.

BETTER FINISHING DATA

is no further away than your dealer. Ask him or write us for the Brightboy Catalog Manual; Write us on any problem where finishing is involved.

BRIGHTBOY INDUSTRIAL DIVISION
WELDON ROBERTS RUBBER CO.
95 No. 13th Street
Newark 7, N. J.
America's Pioneer Manufacturer of Rubber-Bonded Abrasives

WELDON ROBERTS
Brightboy
RUBBER CUSHIONED ABRASIVES

FOR FINISHING ALL METALS PLASTICS AND LAMINATED MATERIALS

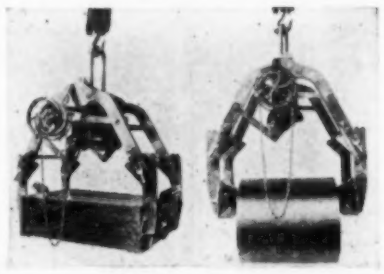
▲ For more details circle **NED-127 C4** on enclosed inquiry slip ▲

GASOLINE STITCHER DRIVE
for portable wire stitching machines

Gasoline-engine operated drive is available on No. 14 and 14B box and bottom Bostitch wire stitching machines. Power unit makes it possible to use machines in locations where electric power is not available and to change the location of the machines as often as desired without need for arranging for electrical connections. Made by **Bostitch,** 1013 Mechanic St., Westerly, R. I.

▲ For more details circle **NED-128 C4** on enclosed inquiry slip ▲

SHEET & COIL LIFTER
lifts up to 20,000 lb



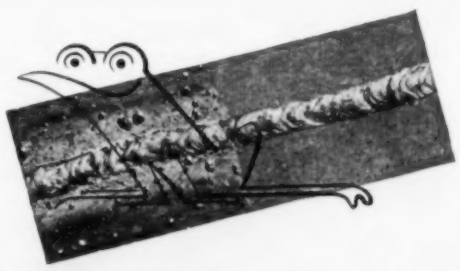
Capable of lifting up to 20,000 lb, stock handling grab is designed for use with both sheet and coil. It incorporates a hinged coil-bearing segment at the center of each carrying angle. When loose or bundled sheets are to be handled, the coil bearers are swung 90 degrees upward and locked out of the way. A wide range of stock sizes can be handled by the lifter, which has infinite adjustment for jaw opening. It can be operated by one man. Made by **Cullen-Friestedt Co.,** 1304 S. Kilbourn Ave., Chicago, Ill.

▲ For more details circle **NED-129 C4** on enclosed inquiry slip ▲

HIGH BAY LIGHTING FIXTURE
is corrosion resistant aluminum

Designed for use with 500-800-w reflector flood and 400-w mercury vapor lamps, style HB-1 high bay lighting unit is of cast aluminum construction. This makes it suitable for use in foundries and other installations where corrosive atmospheric conditions are prevalent. A 12-in. diameter aluminum shield is available as an accessory for use where there are condensation or extreme moisture problems. Made by **Steber Mfg. Co.,** Dept. NED, 2700 Roosevelt Rd., Broadview, Ill.

▲ For more details circle **NED-130 C4** on enclosed inquiry slip ▲



WARTS ARE FOR TOADS, NOT WELDS

Spatter is usually a problem in arc welding . . . but these unsightly metal warts get the quick "brush off" with Protect-O-Metal No. 2. Simply brush or spray P.O.M. on weld area and adjacent surfaces. After welding, the troublesome weld spatter wipes off with a cloth or brush.

P.O.M. No. 2 causes no smoke, fumes or odors; is non-flammable and non-toxic. One coat serves for single or multi-pass welds, costs about 1/10c per foot, saves up to 85% of weld cleaning cost and labor. Order a trial gallon today. Satisfaction guaranteed.

PROTECT-O-METAL
POM
GWSMITH

G. W. SMITH & SONS, INC., 5406 KEMP ROAD, DAYTON, OHIO

▲ For more details circle **NED-131 C4** on enclosed inquiry slip ▲

Let Hartzell Fans Help You Beat the Heat This Summer

COOL BLAST

UTILITY

Heat, dust and fumes mean low morale and efficiency, higher accident rates and increased absenteeism. But Hartzell fans can clear away those annoying elements before they start trouble.

Rugged Hartzell cool blast fans can disperse the heaviest concentrations of heat and fumes. Stationary and portable models, 22" to 40", and the extra-strong heavy duty model, 44" to 60".

The versatile Hartzell utility fan has aptly been termed "the handy fan of industry." Mount this compact, powerful unit on the wall or ceiling, or set it on the floor. It rotates in a full circle, locks in any position. 14" to 36". Larger sizes are also available mounted on a sturdy two-wheeled carriage.

Let your nearby Hartzell representative show you how these Hartzell fans can help you beat the heat this summer. Proper summer ventilation will pay for itself as increased output per man-hour and production dollar.

HARTZELL propeller fan co.
Div. of Castle Hills Corp.
Dept. G. PIQUA, OHIO

ENGINEERING OFFICES IN PRINCIPAL CITIES

▲ For more details circle **NED-132 C4** on enclosed inquiry slip ▲

R&S Waterproof Receptacles, Plugs and Connectors

...For Dependable Protection Against { MOISTURE, DUST, NON-HAZARDOUS VAPORS

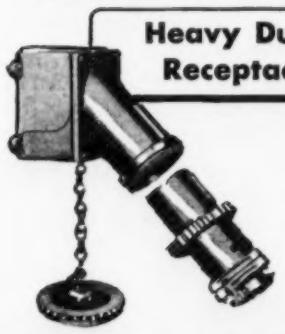
Available in single and multiple gang styles

Type FDE and FSE Waterproof Multi-Circuit Receptacles and Plugs. 5 amperes—250 volts A.C. or D.C. 2 to 12 poles—polarized. For Sound and Control Applications.

●

Type FS and FD Waterproof Receptacles and Plugs. 10 amperes 250 volts, D.C., 440 volts, A.C. and 30 amperes 250 volts, D.C., 20 amperes 575 volts, A.C. 2, 3 and 4 poles—polarized. For Power Applications.

Heavy Duty Waterproof Receptacles and Plugs



15 to 200 amperes, 250 volts, D.C., 440 and 600 volts, A.C. 2, 3 and 4 poles—polarized. Polarized plugs cannot be inserted incorrectly. Sealed cable grip excludes all dirt and moisture. Ample wiring space facilitates servicing and inspection.

R&S—the most complete line of plugs, receptacles and connectors ever made available to industry. An endless variety of types, sizes and assembly combinations—waterproof, weatherproof and explosion-proof—standard or reverse service.

Write for Catalog No. 9048-W 15 C10

RUSSELL & STOLL COMPANY, INC. • 125 BARCLAY ST., NEW YORK 7, N. Y.

RUSSELL & STOLL
PRECISION-BUILT ELECTRICAL EQUIPMENT—SINCE 1902

▲ For more details circle **NED-133 C4** on enclosed inquiry slip ▲

DO YOU KNOW THESE FACTS ABOUT PRE-FINISHING?

Know how to keep your finishing process from becoming outdated? Switch to prefinished ENAMELSTRIP. A few facts about this pioneer process will show you it pays to finish the modern, ENAMELSTRIP way:

- Coats and colors metal before fabricating.
- Eliminates costly operations.
- Comes precision-slit to your specifications in a choice of metals.
- Non-anodized organic finish, withstands all Fabricating stresses.
- Finished in one, or two colors (one on each side).

GET ALL THE FACTS ON ENAMELSTRIP in our new *full-color bulletin.* Send for yours today.

THE COATED COIL CORPORATION
507 West 30th Street, New York 1 • LOngacre 5-3161

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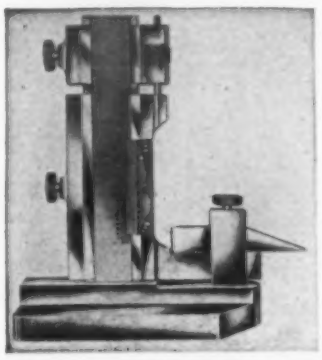
HEIGHT GAGES
chrome-plated stainless steel



Stainless steel satin-finish height gages with chrome-plated graduations are designed for easy reading, since figures stand out clearly against the dull chrome background. This type of construction is also resistant to corrosion caused by finger acidity or rust. Gages are available in 12, 14, 18, 24, 36 and 48-in. sizes and have a 1.225-in. adjustable vernier also fabricated from chrome-plated stainless. Made by **Foster Supplies Co.,** 6122 Milwaukee Ave., Chicago 30, Ill.

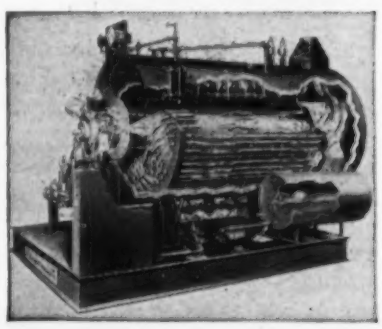
▲ For more details circle NED-136 C4 on enclosed inquiry slip ▲

MACHINERY MOUNTING PAD
can carry load of 75-125 psi

Firmness of the type T Unisorb machinery mounting pad adapts it for use in mounting machines which must remain extremely level during operation. Applications include light and heavy lathes, grinders, milling machines, planers and jig borers. Material is ⅜-in. thick and will carry a load of 75 to 125 psi. It resists petroleum products, mild acids and moisture conditions. Made by **Felters Co.,** Dept. NP, 210 South St., Boston 11, Mass.

▲ For more details circle NED-137 C4 on enclosed inquiry slip ▲

PACKAGED AUTOMATIC BOILERS
line now available up to 100 hp



Now designed for light oil, gas or combination gas-oil firing, model 4 line of Powermaster packaged automatic boilers is available in sizes up to 100 hp at pressures to 250 psi in steam or hot water types. They are of the three-pass type with single flue gas flow reversal at each end. Forced draft eliminates need for stack, and all programming and safety controls are completely automatic. Made by **Orr & Sembower, Inc.,** 800 Morgantown Rd., Reading, Pa.

▲ For more details circle NED-138 C4 on enclosed inquiry slip ▲

Break Loading Bottlenecks!

With MagLiner MAGNESIUM DOCK BOARDS

Magnesium Light!
Magnesium Strong!
Magnesium Safe!

Write today for your copy of Magliner Bulletin DB-204

Have you considered the advantages of equipping your docks with Magliner magnesium dock boards? Are you aware of the many benefits awaiting you? *Reduced loading costs! Easier handling! Greater speed and efficiency in shipping-receiving operations!* In the case illustrated above, the manufacturer took positive steps to insure against the penalty of loading bottlenecks . . . he investigated and installed Magliner magnesium dock boards! What about you? It costs nothing to get the facts! It can keep you steps ahead of the competition!

MAGLINE, INC.
P. O. BOX 396 PINCONNING, MICH.

▲ For more details circle NED-140 C4 on enclosed inquiry slip ▲

for faster production . . . wider heat range

BLUE M INDUSTRIAL BATCH OVENS

DESIGNED FOR HARD CONTINUOUS USE. Blue M's heavy double wall construction means low maintenance and initial cost. The temperature range is the widest available in this type of oven, eliminating the need for extra equipment in the higher ranges. Made of heavy steel throughout. Insulated with 4" of Fiberglas. Ideal for tasks such as coil and armature baking . . . aging . . . curing . . . drying . . . preheating . . . synthetic finish baking . . . preheating plastics . . . curing of coated plating racks . . . core baking . . . tempering . . . silicone baking.

TEMPERATURE MAINTAINED AUTOMATICALLY. The U. L. approved hydraulic thermostat has instantaneous response. It maintains and indicates temperatures over the full 100°F to 600°F range.

DIAGONAL FORCED AIR FLOW. Heated air is circulated from both sides, vertically and horizontally. Air intake and exhaust is positive.

POWER SELECTOR SWITCH SAVES WATTAGE. Automatically regulates wattage at ¼, ½ or full power according to temperature required. Built in motor overload protection and safety door switch. All wiring complete . . . meets N. E. C. specifications.

MODEL NO.	WORKING CHAMBER (Inches) WIDTH	HEIGHT	DEPTH	ELECTRICAL CHARACTERISTICS K. W. (Max.)	VOLTAGE 60 CYCLE A.C.	COMPLETE PRICE
16P	24	48	24	10	230V/1 or 3 ph.	$775.00
24P	36	48	24	14	230V/1 or 3 ph.	975.00
32P	48	48	24	18	230V/1 or 3 ph.	1225.00

Also available for 440V/1 or 3 phase for all sizes.

See your local dealer or write for Bulletin

BLUE M LINE

BLUE M ELECTRIC COMPANY
306-308 West 69th Street, Chicago, Illinois

▲ For more details circle NED-135 C4 on enclosed inquiry slip ▲

SW-42 Double DUALOC Grommet Has a Wide Variety of Uses

• The ACCO *Registered* Double DUALOC Grommet is made of cable-laid wire rope. All-steel construction with flexibility comparable to manila. Spliced section placed over hook doubles bearing surface and increases sling life. The double DUALOC makes this the strongest grommet obtainable, size for size. Yet cost is lower than for ordinary types.

Can be used in vertical, basket, and choker hitches. Proof-tested and warranted at 5 to 1 safety factor. Sizes from 3/32" to 1½" diameter, any circumference.

See your ACCO *Registered* Wire Rope Sling Distributor

ACCO *Trade Mark. Patent No. 2461079
In Canada: Dominion Chain Co. Ltd. Niagara Falls, Ontario

WIRE ROPE SLING DEPARTMENT
AMERICAN CHAIN & CABLE
Wilkes-Barre, Pa., Chicago, Denver, Houston, Los Angeles, New York, Odessa, Tex., Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.

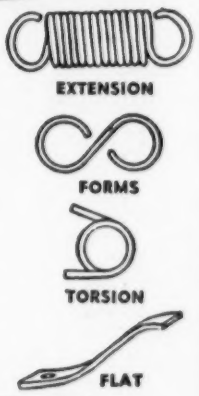
ACCO Registered DUALOC Slings

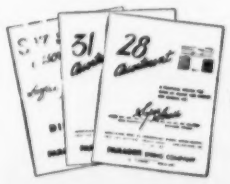
▲ For more details circle NED-139 C4 on enclosed inquiry slip ▲

QUALITY CONSCIOUS SPRING BUYERS CHOOSE

PARAGON SPRINGS

Springs from Paragon are good springs . . . because of our complete control during manufacture. Our customers know that even commercial springs are better from Paragon . . . at no extra cost. Whatever your requirements . . . Precision or Commercial . . . your orders and inquiries receive expert individual attention.





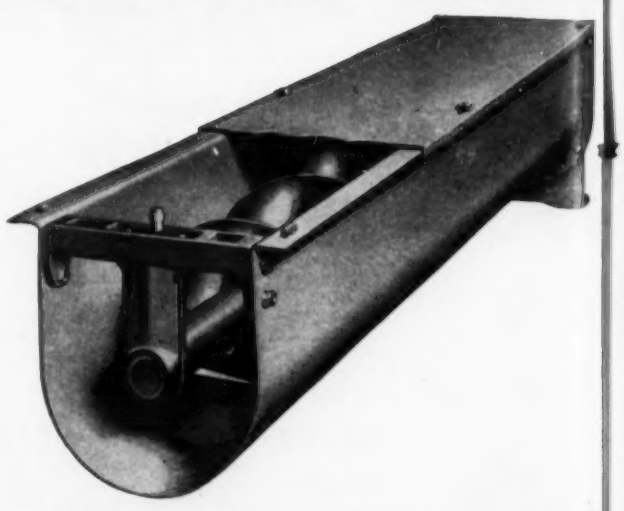
SEND SPECS FOR QUOTATION

Write for STOCK SPRING DATA SHEETS giving complete specs, loading and design information.

PARAGON SPRING COMPANY
4619 W. Fulton St. • Chicago 44, Ill.

▲ For more details circle NED-141 C4 on enclosed inquiry slip ▲

JEFFREY SPIRAL CONVEYOR



Jeffrey's complete line of Spiral Conveyors including Sectional Flight, Helicoid, Mixer, Cut Flight, Ribbon and Cast Iron are designed for practically any requirement and operating condition. Engineered for uniform strength and true alignment, they are standard units ready to be fitted into present or new systems.

Write for Catalog 851 for more information

THE JEFFREY MANUFACTURING CO.
Columbus 16, Ohio

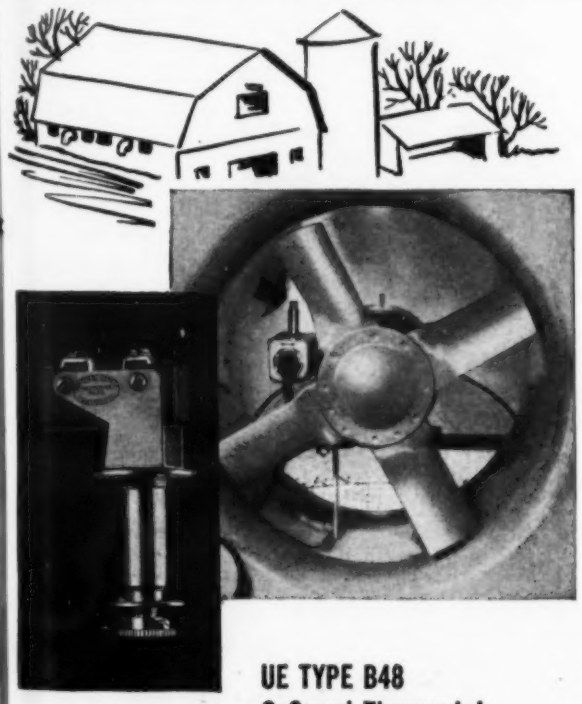
IF IT'S MINED, PROCESSED OR MOVED . . . IT'S A JOB FOR JEFFREY!

sales offices and distributors in principal cities

▲ For more details circle NED-142 C4 on enclosed inquiry slip ▲

▲ For more details circle NED-143 C4 on enclosed inquiry slip ▲

UE TEMPERATURE CONTROLS HELP FAN-PAC SYSTEMS IMPROVE BARN VENTILATION



UE TYPE B48
2-Speed Thermostat

Good ventilation at ideal temperatures of 50°F in dairy barns and 40°F in poultry houses means increased milk and egg production. These temperatures are accurately maintained by the United Electric Type B48 thermostat used in Fan-Pac ventilating systems made by American Machine and Metals Co., De Bothezat Fans Division. The Type B48 slows down – or speeds up – the two-stage motor-controlled vent fan according to the temperature change required. As Fan-Pac manufacturers state, the Type B48 is "easy to set, accurate, dust-proof, moisture-proof and fool-proof".

United Electric manufactures a wide line of standard controls that are used in aircraft fuel purging systems, paper mill machinery, diesel engines, milk pasteurizers, room air conditioners and in countless other industrial and domestic applications.

Special controls can either be adapted from standard models, or custom-built by United engineers working in cooperation with your own product development engineers.

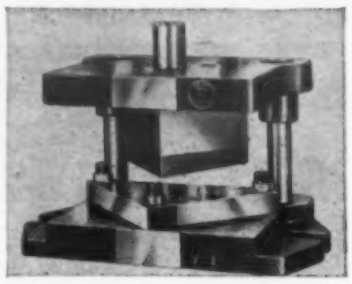
Write today for information on the complete line of United Electric controls.

Standard and special thermostats and pressure switches

UNITED ELECTRIC CONTROLS CO.
81 School Street, Watertown, Mass.

▲ For more details circle NED-144 C4 on enclosed inquiry slip ▲

V-NOTCHING TOOL
handles stock up to 3/8-in. thick



Precision tool consisting of punch, die and die set will V-notch angle iron up to 3 x 3 x 3/8 in. to give a full 90-degree bend, as well as flat stock up to 3/8-in. thick. Notching action gives sharp, smooth cuts with no deformation of stock. Finish grinding or filing is unnecessary. Unit is available with liner pins as shown, or without liner pins. Special sizes for use in hand or power presses are also available. Notcher illustrated measures 7 1/4 x 9 x 11 in. and requires die space of 7 1/4 in. Made by **Vogel Tool & Die Corp.**, 1824 N. 32nd Ave., Melrose Park, Ill.

▲ For more details circle NED-145 C4 on enclosed inquiry slip ▲

FEED & SPEED CALCULATOR
for carbide machining operations

This feed and speed calculator has been simplified for faster, easier determination of factors involved in metalworking operations. Suitable for all carbide machining operations, calculator has wide range of feed, speed and depth-of-cut figures, as well as a carbide grade chart. It is available without charge from **Wendt-Sonis Co.**, Dept. NE-1, Hannibal, Mo.

▲ For more details circle NED-146 C4 on enclosed inquiry slip ▲

METAL NAMEPLATES
adhere to curved or flat surfaces

Speedy-Cal metal nameplates will permanently adhere to curved or flat surfaces such as porcelain, glass, Bakelite, wood and metal. They are offered in wide

variety of colors and clear aluminum and will not crack, peal, chip or tarnish. Available as nameplates, trademarks, circuit diagrams, terminal designations and other types, they are made of 0.003-in. foil laminated with a transparent bonding material. It is possible to serialize them in any typewriter. Made by **North Shore Nameplate Co.**, Dept. NED, Bank of Manhattan Bldg., Bayside, L. I., N. Y.

▲ For more details circle NED-147 C4 on enclosed inquiry slip ▲

PANALARM AUDIO-VISUAL SIGNALS
reduce your operating costs

Applied to any automatic or semi-automatic process, PANALARM "50" Annunciators simplify operation. They provide a combined audible and visual signal requiring operator acknowledgment when any "off-normal" condition occurs. They give high or low signals for liquid level, temperature, pressure, mechanical limits, pump failure or any similar factor.

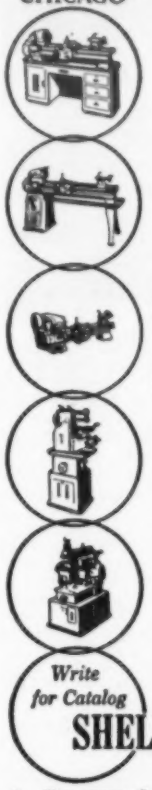
System is pre-wired, easily installed. All contacts and moving parts are within hermetically sealed plug-in units which assure trouble-free operation, and are suitable for Class 1, Div. 2 locations. Additional signals may be added by simply plugging into chassis.

WRITE FOR CATALOG 100.

PANALARM PRODUCTS INC.
6312 North Broadway • Chicago 40, Illinois

▲ For more details circle NED-148 C4 on enclosed inquiry slip ▲

SHELDON
CHICAGO U.S.A.



OFTEN PAYS OUT ON THE FIRST JOB...
and gives additional years of "cost free" service.

In the past, lathes were generally bought as large and as heavy as possible to insure accuracy and sufficient power. Now, with accurate, low-cost Sheldon Precision lathes, it is more profitable to buy these faster, cost-cutting lathes for the specific job at hand just as you would buy jigs and fixtures.

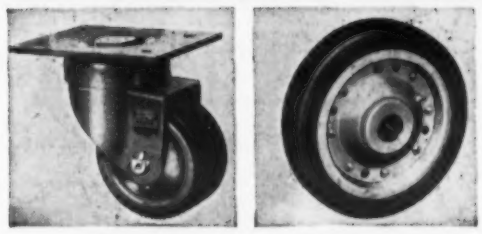
In savings of tooling costs, operator cost, power cost, and plant loading, as well as extra profits from more pieces per hour, Sheldon lathes often pay back their cost on a single run.

Sheldon lathes will work to the closest tolerances—have "Zero Precision" Taper Roller Bearings. They can take a healthy cut when operating at high speed direct drive—have double V-belts to the spindle. They will swing 10", 11" or 13" and have a 1 3/8" hole through the spindle—have sufficient capacity for the great bulk of lathe work. Sheldon lathes have created a new factor for figuring machinery costs. They are tools you should know about.

Write for Catalog

SHELDON MACHINE CO., INC.
4215 N. Knox Ave. Chicago 41, Illinois

▲ For more details circle NED-149 C4 on enclosed inquiry slip ▲



For Greater Economy

DARNELL
CASTERS & WHEELS

Free Manual

DARNELL CORPORATION, LTD.
DOWNEY (LOS ANGELES COUNTY) CALIFORNIA
60 WALKER STREET, NEW YORK 13, NEW YORK
36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

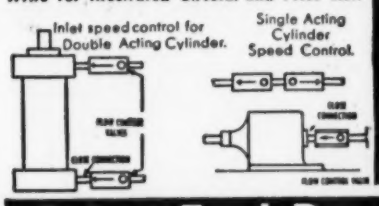
▲ For more details circle NED-150 C4 on enclosed inquiry slip ▲

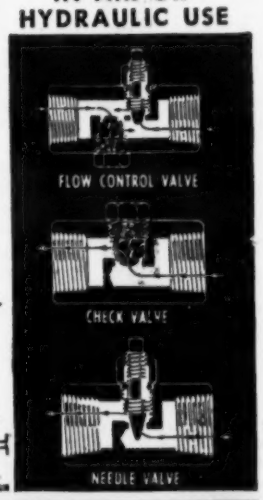
Get Easier, More Accurate Cylinder Speed Control
with *Pneu-Trol* VALVES IN AIR OR HYDRAULIC USE

2000 and 5000 (steel) P.S.I.

Pneu-Trol Valves combine in a short, compact body, a tapered fine thread needle for extremely accurate air or oil flow control and a floating retro ball check, which permits full flow in the opposite direction. Retro ball floats in most sensitive position to seat, requiring only a slight differential pressure to fully open or close it. Check Valve and Needle Valve incorporate single function features of Flow Control Valve. All valves available in 6 female pipe sizes — 1/8" to 3/4". Valve bodies are made from brass, aluminum, steel or stainless steel. Attractive Prices — Immediate Delivery.

Write for Illustrated Circular and Price List.





Pneu-Trol Devices, Inc.
1436 N. Keating Ave., Chicago 51, Ill.

▲ For more details circle NED-151 C4 on enclosed inquiry slip ▲

Quik-Lift Electric Hoists, 17 models, capacities from 500 to 4,000 lb.

"what's so good about
COIL CHAIN
on Electric Hoists?"

Coffing Quik-Lift Electric Hoists are offered with coil chain. There are many good reasons why.

1. A coil chain hoist has 360-degree flexibility.
2. Coil chain will feed into a hook-suspended hoist from an angle.
3. Coil chain will not wind up or kink regardless of load.
4. Coil chain cannot fray
5. Coil chain shows greatest resistance to corrosion.
6. A coil chain hoist may be hook-suspended since load never shifts.
7. A coil chain hoist may be adapted for any height of lift.
8. Coil chain requires less maintenance — there's more production time.

That's what's so good about coil chain on Quik-Lift Electric Hoists. For full details, write for bulletin X3E.

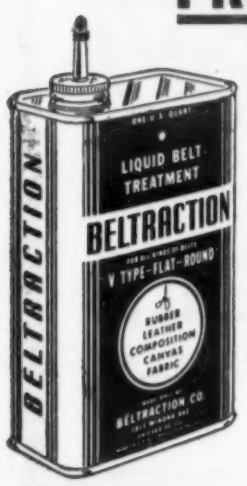
COFFING HOIST CO., Danville, Illinois
Sold by Distributors Everywhere

Hoist-Alls • Safety-Pull Ratchet Lever Hoists • Mighty-Midget Pullers • Spur-Gear Hoists • Differential Chain Hoists • Load Binders • I-Beam Trolleys

▲ For more details circle NED-152 C4 on enclosed inquiry slip ▲

when your BELTS slip...

your PROFITS SLIP too!



- You WASTE POWER and FUEL
- You WASTE TIME (A slipping belt can reduce machine output as much as 70%.)
- You WEAR OUT your BELTS and MACHINES faster

STOP belt slippage with

BELTRACTION

LIQUID BELT TREATMENT

This more efficient belt conditioner increases traction 200% to 500%, prevents belt slippage (one of the most common causes of chattering and misalignment of precision tools)—and thereby minimizes rejects. Increase your profits with BELTRACTION. Order some today. Write for descriptive folder!

Also Prolongs Belt Life
BELTRACTION weatherproofs, oilproofs and waterproofs all kinds of belts—works foreign substances off of belts and keeps them clean — minimizes belt replacements.

BELTRACTION COMPANY
1817 W. Winona St. Chicago 40, Ill.

FOR ALL TYPES OF BELTS • V-TYPE, FLAT OR ROUND

▲ For more details circle NED-153 C4 on enclosed inquiry slip ▲

Flat or round-end adjustable units wholly protected from moisture.

Oils, acids, alkalies or water—
where conditions are tough
this unit is tougher

Fenwal
THERMOSWITCH®
units enclosed
in plastic

Does moisture complicate your temperature control or detection problem? It needn't.

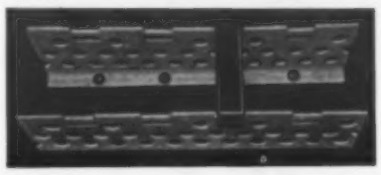
There are now Fenwal THERMOSWITCH units dialectrically sealed in plastic that operate with the greatest sensitivity, yet are impervious to most of the acids, alkalies and oils used in industry. They can be, if desired, completely submerged in water or other non-injurious liquids without impairment of efficient function. Wide variety of applications in chemical processing, refrigeration, greenhouses, farms, etc. Operate with a sensitivity of 0.5°F. Units available which will either close or open an electrical circuit.

Free bulletin gives complete engineering data and prices. Write Fenwal Incorporated, 83 Pleasant Street, Ashland, Mass.

Fenwal
THERMOSWITCH®
Electric Temperature Control and Detection Devices
SENSITIVE...*but only to heat*

▲ For more details circle NED-154 C4 on enclosed inquiry slip ▲

CONTROL WIRING DUCT
flexible design permits its use in wide range of equipment

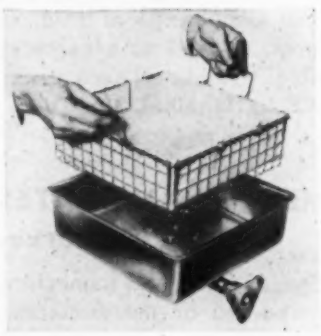


Consisting of hole-punched side angles, plastic covers and snap-on cover clips, Panel-Chanel phenolic wiring duct for electric control panel boards and equipment wiring is extremely flexible in its application. Side angles of laminated plastic are perforated with series of ⅜-in. holes for passage of wires and are attached directly to panel prior to wiring. When wiring is completed, phenolic covers are held in place by snap-on steel clips. Side angles are offered in 2 and 3-in. heights, and covers and clips are furnished in 1, 1½, 2 and 3-in. widths. Standard lengths are 3 and 4 ft.

Time studies are reported to show labor savings of 40 to 70 per cent over conventional methods of panel-board wiring. Minimum of inventory is required for all wiring needs. Wires are concealed for safety and neatness, and wires can be cut to exact length needed. Covers snap off for inspection or maintenance. Made by **Stahlin Brothers Fibre Works,** 1900 Maple St., Belding, Mich.

▲ For more details circle NED-155 C4 on enclosed inquiry slip ▲

SMALL COOLANT FILTER
for low volume applications



Continuous full-flow filtration for small coolant flows from grinders, cutters, hobbers, hones and other machines is provided by the Delpark Junior filter. It removes abrasive solids from coolant as it comes from the work, making possible good finishes, long wheel and tool life and maintenance of close tolerances. Unit is offered with combination mounting bracket and clean coolant return line. A connection is available for separate pipe or hose. Woven wire basket holds the disposable filter tray which is easily removed and replaced. Made by **Industrial Filtration Co.,** Dept. 203, Lebanon, Ind.

▲ For more details circle NED-156 C4 on enclosed inquiry slip ▲

DO YOU KNOW? Alcoa A54S alloy has been approved by the Boiler Code committee of ASME for construction of unfired pressure vessels. Strength is greater than that of any alloys previously approved for welded pressure vessels, ranging from 7350 at 100° F to 4900 at 400° F. Developed by Aluminum Co. of America, 1501 Alcoa Bldg., Pittsburgh 19, Pa.

▲ For more details circle NED-157 C4 on enclosed inquiry slip ▲

PAGE FENCE *-Since 1883*

• AMERICA'S FIRST WIRE FENCE •

• Page Chain Link Fence, pioneered by Page and made only by Page, is quality controlled from raw metal to erected fence. Whether you choose heavily-galvanized Copper Bearing Steel, or long-lasting Stainless Steel, or corrosion-resisting Aluminum, you'll have a rugged fence on sturdy metal posts deep-set in concrete. Choose any one of 8 basic styles, varied by heights, types of gates, posts, top rails and barbed wire strands for extra protection. And to be sure of reliable workmanship your fence will be expertly erected by a specially trained firm. For helpful Page data and name of member nearest you—

Write to PAGE FENCE ASSOCIATION in Monessen, Pa., Atlanta, Bridgeport, Chicago, Denver, Detroit, Los Angeles, Philadelphia, New York or San Francisco.

PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC.

▲ For more details circle NED-158 C4 on enclosed inquiry slip ▲

"Saved Cost of New Warehouse" says PALTIER USER

Paltier
STORAGE SYSTEM

increases storage space up to **75%** and more — decreases man handling as much as **75%**

ASK US: PALTIER studies your storage problem —engineers and designs a system for your specific needs.

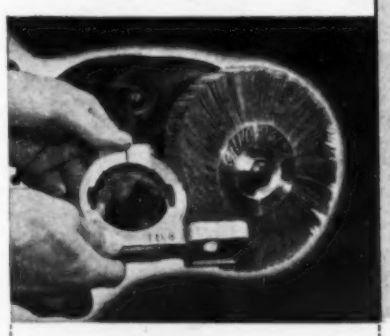
Many PALTIER installations pay for themselves "right from the start."

This booklet tells the PALTIER story, ask for it today.

THE **PALTIER** CORP.
1705 Kentucky St., Michigan City, Ind.

▲ For more details circle NED-159 C4 on enclosed inquiry slip ▲

Hoffman Laboratories reports:
"Many hours have been saved since deburring with *GRIND-O-FLEX*"
FLEXIBLE GRINDING WHEEL



Hoffman Laboratories, Inc., Los Angeles, a subsidiary of Hoffman Television, uses Grind-O-Flex for deburring and removing die marks from pressed aluminum cover panels for electronic equipment. Grind-O-Flex did the job better and faster than any other method. Hoffman has also put Grind-O-Flex to work in the machine and plating shops for general polishing and deburring work.

Hoffman
LABORATORIES, INC.

November 3, 1953

Merit Products Inc.

Gentlemen:

Use of your Grind-O-Flex wheel has proven of great value in the preparation of sheet metal components for further processing, not only as a means of deburring, but also for the removal of die marks on surfaces to be painted.

Through its application many man hours have been saved, yet a high quality finish has been maintained. Its uses are varied, and more are being found each day.

Very truly yours,
HOFFMAN LABORATORIES, INC.
M. A. Southard
M. A. Southard
General Foreman, Machine Shop

Grind-O-Flex is new. There is nothing like it. It consists of hundreds of individual strips of abrasive cloth sealed to a core. When rotated on an arbor it becomes a flexible abrasive wheel for light grinding and metal finishing. It will not dig into surfaces or "flat" contours. Wheel is 1" wide by 6½" diameter and comes in a choice of grits from coarse (for light grinding) to very fine (for polishing). No special equipment is needed, no belts to change, no adjustments to make, no compounds to handle. Mount Grind-O-Flex to a motor shaft or to your power tools (¼ HP is adequate). Write for complete information and prices.

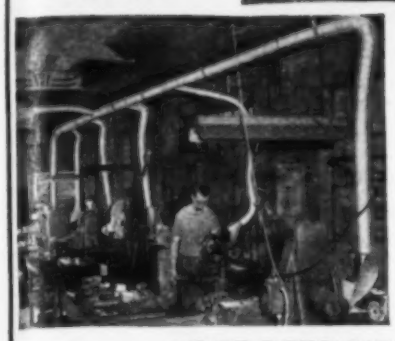
MERIT PRODUCTS, INC.
4023 IRVING PLACE, CULVER CITY, CALIFORNIA

▲ For more details circle NED-160 C4 on enclosed inquiry slip ▲

STOP DUST INSTANTLY WITH DUSTKOP

300 cfm to 10,000 cfm standard pre-tested units available in stock

- LOW COST
- IMMEDIATE INSTALLATION
- SAVES HEAT
- PORTABLE



2405 ◀ cfm 1400▲ cfm

DUSTKOP

WRITE FOR

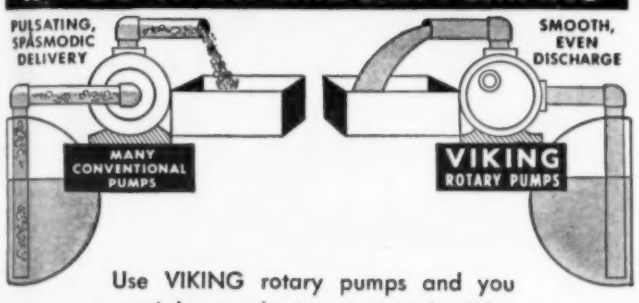
- RECOMMENDATION about your dust problem. No obligation
- CATALOG 605-2

AGET-DETROIT CO.

202 S. Main St. Ann Arbor, Mich.

▲ For more details circle NED-161 C4 on enclosed inquiry slip ▲

IF YOU WANT SMOOTH PUMPING



Use VIKING rotary pumps and you won't have pulsating, spasmodic delivery with aerated and foamy discharge.

With VIKINGS, you have fast, smooth priming and constant, even discharge of the liquids from beginning to end.

You can also handle not only thin, gaseous liquids, but heavy, viscous liquids as well. And all can be handled with excellent results.

Ask for further details today. Bulletin 54SG sent promptly on request.

VIKING AN HONORED NAME IN PUMPING

See Our Catalog in SWEETS

VIKING PUMP COMPANY CEDAR FALLS, IOWA

▲ For more details circle NED-162 C4 on enclosed inquiry slip ▲

PHOTO EQUIPMENT... Geared to INDUSTRIAL & SCIENTIFIC Uses

FREE 55th Annual Catalog

96 Pages crammed with THOUSANDS of Newest *Photo Tools, Cameras* (Press, Studio, Candid, Special Purpose, etc.), *Lenses, Projectors,* Lighting Equipment, Developing Equip., Enlargers, etc., for Amateur — Professional in daily Scientific or Industrial work.

CAMERAS—of all types! Special purpose, Photomicrography, Laboratory, NEW POLAROID LAND BACK, etc.

LENSES— World's largest stock, from 3/8" to 72". — All speeds, and types, special Mounts, Lenskoting, etc.

LABORATORY EQUIPMENT — Stainless Steel Equipment, Dryers, etc.

Write TODAY to . . . NED.

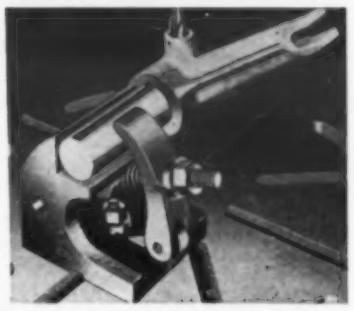
Burke & James, Inc.

FINE PHOTOGRAPHIC EQUIPMENT SINCE 1897

321 S. Wabash Ave., Chicago 4, Illinois, U. S. A.

▲ For more details circle NED-163 C4 on enclosed inquiry slip ▲

CLAMPING FIXTURES for milling, drilling, shaping, etc.



Designed for clamping work for milling, drilling, shaping and other similar jobs, Hart milling fixtures will clamp round, hexagonal, octagonal or square stock in any position. Open design permits keyways or other similar machining to be performed over the full length of the stock without unclamping. Fixtures are available in four sizes having capacities ranging from ½ to 4½ in. They can be used in either horizontal or vertical positions, and are supplied with standard Tee-slot blocks for attachment to the machine. Made by **Walter W. Field & Son, Inc.,** 41 Hayward St., Cambridge 42, Mass.

▲ For more details circle NED-164 C4 on enclosed inquiry slip ▲

DIGITAL READOUT PRINTER is electrically energized machine

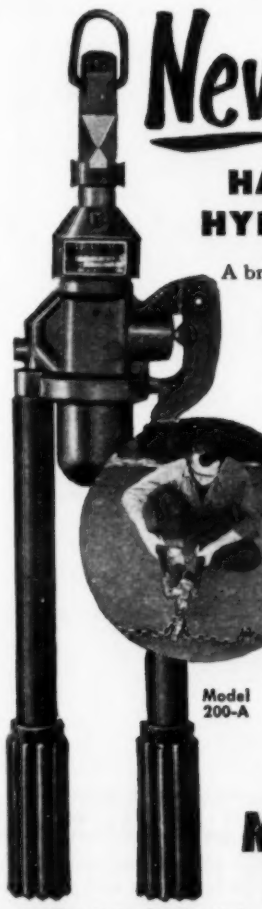
Usable where electrically controlled printing is required and where numerical data are accumulated in the machine and accumulated amount periodically printed, this Clary digital readout printer has three columns of energized input keys. It is applicable wherever counting and adding can be controlled remotely. Typical industrial uses include totaling units, assembly line control and totaling from impulse counters in laboratory work. Entries can be made up to 999, accumulated and read out up to 99999999 in model 1910, illustrated, and up to 999999999999 in model 1911 at rates up to two cycles per second. Amounts to be entered electrically can be increased by factory change, if desired. Full set of keys also provides for operation as standard electric adding machine. Made by **Clary Multiplier Corp.,** Electronics Div., Juniper & Thomas Sts., San Gabriel, Calif.

▲ For more details circle NED-165 C4 on enclosed inquiry slip ▲

DO YOU KNOW? The first commercial production of vacuum-melted high temperature alloys and the expanded production of high purity nickel alloys for electronic tube construction is being launched. Two and three-fold increase in the life of ball bearings made of Ferrovac-52100 vacuum-refined steel has been reported. Other vacuum-melted alloy steels are available for applications requiring high fatigue strength. Made by Vacuum Metals Corp., 70 Memorial Dr., Cambridge 42, Mass.

▲ For more details circle NED-166 C4 on enclosed inquiry slip ▲

New MANCO HAND-OPERATED HYDRAULIC CUTTER



A brand new development in hand-operated cutting tools. Tremendous hydraulic cutting force produced by easy hand-pump action.

Provides 10 Tons Thrust

The powerful, yet compact and relatively lightweight Manco Hydraulic Cutter bites right through ½" reinforcing rod, chain, bolts, etc. Unique dual ratio pump affords rapid traverse for speed of cut. Twist of handle grip provides automatic blade retraction. Blades easily removed for sharpening. Can be adapted for riveting, crimping, punching, etc. Weight 15 lbs. Length 24".

Model 200-A

Write for complete information

Dept. NED-3

MANCO MFG. CO.

BRADLEY, ILLINOIS

▲ For more details circle NED-167 C4 on enclosed inquiry slip ▲

THE HAMILTON PORTELVATOR®

(Portable Elevating Table)

MAKES IT *Easy* TO LIFT • LOWER LEVEL • TRANSPORT LOADS UP TO 5,000 lbs.

3 TABLE SURFACES

Can be worked at from ALL 4 SIDES

Slow or fast lift.

Self locking at any height.

4 POINT SUPPORT (table can't tip)

Lift mechanism can be operated from either end.

Turns easily on anti-friction casters. Positive floor lock.

WELDED CONSTRUCTION

STYLE "A" (Illustrated)*

Max. Height 40" Min. Height 25" Length 33" Width 21" Weight 225 lbs.

Capacity 2,000 lbs. (plus safety factor)

*THREE STANDARD MODELS TO CHOOSE FROM

GET THE DETAILS • WRITE FOR BULLETIN P-5248

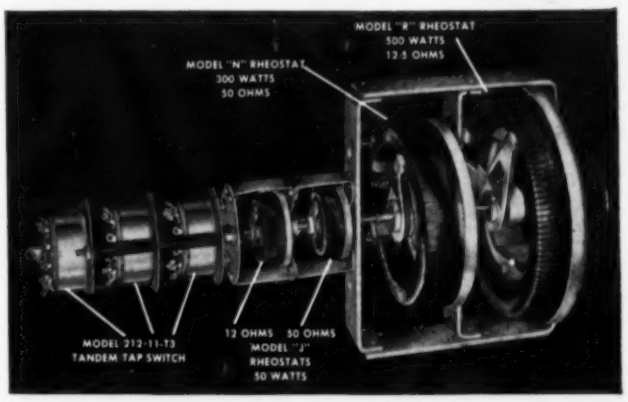
THE Hamilton TOOL COMPANY

901 HANOVER STREET • HAMILTON, OHIO • U • S • A

▲ For more details circle NED-168 C4 on enclosed inquiry slip ▲

OHMITE® RHEOSTATS IN *Special Tandem Assemblies*

MADE TO ORDER TO SOLVE YOUR UNUSUAL CONTROL PROBLEMS



The above device was specially developed by Ohmite engineers to solve an unusual control problem—how to test and demonstrate various methods of A-C motor speed regulation *with one-knob control.* The result was a special combination of four standard Ohmite rheostats and three standard Ohmite 11-position switches, all coupled together in tandem, and operated by one knob. Any or all units can be connected in the test circuit or wired in any desired fashion. This is only one of innumerable combinations of rheostats, resistors, and tap switches that Ohmite can engineer for special jobs. Why don't you consult Ohmite about your own special control problems.

Write on Company Letterhead for Catalog and Engineering Manual No. 40

OHMITE MANUFACTURING CO.

3620 Howard St., Skokie, Ill.

(Suburb of Chicago)

Be Right with OHMITE

RHEOSTATS • RESISTORS • TAP SWITCHES

▲ For more details circle NED-169 C4 on enclosed inquiry slip ▲

RELIEVE EMBRITTLEMENT

with a DESPATCH "RS" OVEN

This Despatch RS-3 oven is used 16 hours a day at temperatures up to 550° F. Installed at the St. Paul, Minn. maintenance shops of Northwest Airlines, it is used in several important baking procedures. This includes stress relief from welding as well as relief of hydrogen embrittlement from plating on crank cases, landing gears, couplings, propeller shafts, knuckle pins, brake discs and other parts.

Specifications: Despatch RS-3 Oven, 48" x 48" x 72" Inside. Electric 17 or 26 KW; Gas 83 CFH. 22 ga. steel with 3" or 5" Rockwood Insulation.

Wherever electroplating is done, there's a Despatch Oven available for relief of embrittlement. Physical properties of the steel are largely restored and hydrogen is substantially removed by the heating process. Plated parts are usually baked from 1 to 5 hours at 375°-650° F. It is recommended that the baking operation begin immediately after plating and before the plated surfaces have been otherwise treated.

Write for fully illustrated No. 200 Bulletin

DESPATCH OVEN CO. Established in 1902

DESPATCH OVEN CO.
325 Despatch Building
Minneapolis 14, Minn.

▲ For more details circle **NED-170 C4** on enclosed inquiry slip ▲

JIG GRINDING ACCURACY *guaranteed**

INFINITE CONTROLLED SPEEDS 30,000 TO 65,000 R. P. M.

Easily connect jig grinder to jig borer or mill

Then you can finish grind in hardened steel to "tenths" . . . jig grind dowel holes square with a ground base . . . move location of holes in hardened steel blocks . . . jig grind interchangeable holes in hardened sections . . . grind small holes with diamond impregnated mandrels . . . grind contours and relief with tungsten carbide burrs . . . grind radii in die sections . . . eliminate jig bushings in tools where close spacing is essential.

Other infinitely controlled air driven spindle applications

Place spindle on most any machine. Use it for finishing contours on hardened steel working surfaces . . . burring or milling die castings . . . routing wood contours . . . carbide milling or finishing slots . . . finishing holes in hardened steel to "tenths" . . . grinding with diamond wheels, carbide burrs, or diamond impregnated mandrels.

Advantages—10 micro finishes using carbide mills . . . 6 micro finishes using mounted points, operates at any angle . . . air driven, air cooled, overheating prevented . . . speed controlled at optimum point . . . 3¾" long motor uses little working space . . . By controlling speed at any point you abolish need for many constant speed spindles.

For immediate quotation please state machine tool application. Get this manual of photos showing operations Vulcanaire performs.

*Dependably accurate to "tenths"

Vulcanaire
It's built by toolmakers for toolmakers

VULCAN TOOL CO., 737 Lorain DAYTON 10, OHIO

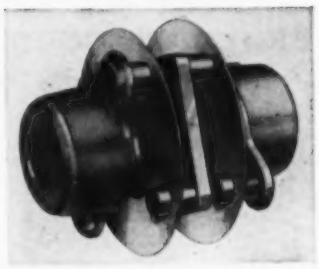
▲ For more details circle **NED-171 C4** on enclosed inquiry slip ▲

INSPECTION LIGHT
kerosene burning, 2000 candlepower

Designed for use in confined places as a hand inspection lamp or small floodlight, model AL-21 inspection lamp produces 2000 mean reflected candlepower. Of the kerosene-burning type, it weighs 7½ lb, has a 1½-pint fuel reservoir sufficient for 12 hours and measures 9 x 9 x 11½ in. Distributed by **Wm. W. Lee & Son,** 20 E. Jackson Blvd., Chicago 4, Ill.

▲ For more details circle **NED-172 C4** on enclosed inquiry slip ▲

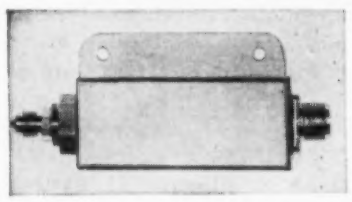
FLEXIBLE COUPLINGS
for electro-mechanical applications



Designed for use in servomechanisms, computers and electro-mechanical instruments, flexible couplings have zero backlash and low inertia. They permit relatively high torque operation and eliminate velocity variations between driving and driven shafts due to small angular misalignments. They are available in three series having ¼, 1 and ½-in. diameters with a wide range of bore sizes from $\frac{1}{16}$ to $\frac{1}{2}$ in. Each series is in turn available in single disk, double disk without center plate and double disk with center plate types. Brass and aluminum hubs are available with clamped or set screw mountings. Made by **Renbrandt, Inc.,** Dept. A, 98 Kirkland St., Cambridge 38, Mass.

▲ For more details circle **NED-173 C4** on enclosed inquiry slip ▲

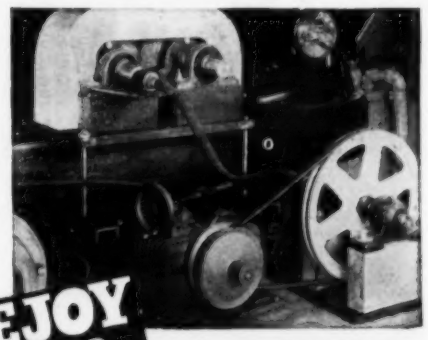
PRESSURE SWITCH
has range of 400-3500 psi



Bursting pressures up to 7500 psi can be withstood without leakage, loss of ability to recycle to original setting or damage to working parts by the PreReg pressure switch, which weighs 8-oz. It operates over a range of hydraulic or pneumatic pressures from 400 to 3500 psi at ambient temperatures of −65 to 160° F. Within the above working limits, switch responds to a minimum differential of 200 psi. It is a single-pole, double-throw unit, normally closed, rated for 10 amp at 28 v dc at 50,000 ft. Overall dimensions are 4.75 x 2 x 1.28 in. Working pressure adjustment is easily changed. Made by **PreReg Mfg., Inc.,** 22N Liberty St., Stamford, Conn.

▲ For more details circle **NED-174 C4** on enclosed inquiry slip ▲

the right speed always to FIT THE JOB!



LOVEJOY SELECT-O-SPEED *Variable Speed Transmissions*

Here a Select-O-Speed Transmission is used to drive and control the speed of a pulley and flexible shaft connected to a vibrator that checks vibration of vehicular components at changing speeds.

Make accurate speed adjustments on all types of machinery, new or old, for: *testing—operator ability—variously sized parts or stock—material differences—any other operational variables. . .without loss of time or labor.*

Easily installed, Lovejoy Select-O-Speed Transmissions provide better, more efficient production control to help you improve the quality of your products. Speed ratios to 10 to 1. Sizes to 5 hp. Hand lever or wheel control. Operate with standard V-belt drives. Fully enclosed. Send today for illustrated catalog giving complete information.

LOVEJOY FLEXIBLE COUPLING CO.

4803 W. Lake Street Chicago 44, Illinois
Also Mfrs. of Flexible Couplings, Universal Joints and Variable Speed Pulleys.

▲ For more details circle **NED-175 C4** on enclosed inquiry slip ▲

NO PASSENGERS ALLOWED

Courtesy Best Foods, Inc.

RAISING AND LOWERING LOADED PALLETS

Where pallet loads are transferred from one level to another, this type of conveyor does the raising or lowering quickly, safely and automatically. The carrier and stations at all levels are equipped with reversible power units for loading or discharging the pay-load.

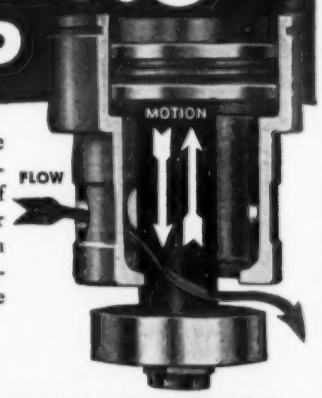
At Alvey, every conveyor problem is special. Every system is exactly tailored to your particular needs . . . to reduce costs and speed product handling. An Alvey Engineer will visit your plant and evaluate your problem. Write for appointment.

ALVEY CONVEYOR MANUFACTURING COMPANY
9259 Olive Street Road, St. Louis 24, Missouri

ALVEY *Branch Offices in Principal Cities* 129

▲ For more details circle **NED-176 C4** on enclosed inquiry slip ▲

NO SPRINGS NEEDED



This removable cartridge contains the "piston poppet,"...only moving part of a Hannifin "P-M" Master Valve. This piston-driven poppet is pressure operated both ways. There are ***no springs to fail!***

WRITE FOR OUR COMPLETE NEW "P-M" VALVE CATALOG

Find out how P-M Master Valves (pressure-operated) and Pilot-Master Valves (solenoid-controlled, pressure-operated) can all be serviced with a stock of just two sizes of these removable cartridges. 2-Way, 3-Way, 4-Way. Sizes: ⅜" to 1¼". Also, two complete series of ¼" direct-operated valves. Bulletin 232.

HANNIFIN

Hannifin Corporation, 1127 S. Kilbourn Ave., Chicago 24, Ill.
AIR AND HYDRAULIC CYLINDERS • PRESSES • AIR CONTROL VALVES

▲ For more details circle **NED-177 C4** on enclosed inquiry slip ▲

now-
MEASURE, CONTROL LIQUID DENSITY
continuously and automatically with the

PRINCO Since 1910

Densitrol

Process industries will welcome the new DENSITROL—the precision instrument that gives a continuous reading of density in flowing liquids such as sugar syrups, brine, acids. DENSITROL electrical indicators or recorders can be located remote from the sampling chamber itself. If desired, DENSITROL can be linked with control mechanisms for automatic regulation. For information on temperature and pressure ranges, calibrations, and other specifics, request Bulletin W-3.

PRECISION
THERMOMETER & INSTRUMENT CO.
1434 Brandywine Street, Philadelphia 30, Pa.

Makers of precision-built thermometers, barometers, hydrometers, gauges, indicators, mercury in glass thermo-regulators.

▲ For more details circle **NED-178 C4** on enclosed inquiry slip ▲

▲ For more details circle NED-179 C4 on enclosed inquiry slip ▲

an ACCO product

Helicoid Gages

are protected two ways against FLUTTER

Flutter and rapid surges have no effect on the accurate, long-life performance of HELICOID Gages. Tests show they withstand over 75,000,000 cycles at 1200 pulsations per minute without wear.

1. There are no gears to wear out. Only HELICOID Gages give this long lasting gage movement. Cam wiping action keeps contact points clean and smooth.

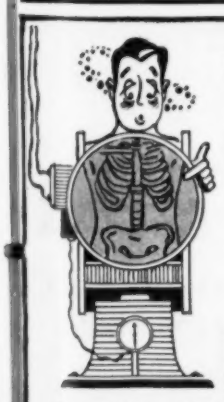
2. Bourdon tubes won't stretch, leak or crack. Bourdon tubes in HELICOID Gages give maximum torque and minimum stress—withstand millions of pulsations with greatest possible endurance life.

For Pressure, Vacuum or Compound Service
HELICOID Gages are available for all pressure ranges—with white, black or radiant faces—wall, stem, flush or panel mountings for flangeless cases. See your distributor today or write for **Catalog G-2.**

ACCO
Helicoid Gage Division
AMERICAN CHAIN & CABLE
927 Connecticut Ave. • Bridgeport 2, Connecticut

Pressure • Vacuum • Compound

▲ For more details circle NED-180 C4 on enclosed inquiry slip ▲



"See all" with... BOWSER FLOW SIGHTS

Bowser Flow Sights let you "see all"—enable you to keep a watchful eye on your liquid handling operation. It pays to know the quality or the approximate quantity that's going through your lines.

Available in either single or double window types, in gravity or pressure models with or without electric control switch. Bowser Flow Sights are made in various metals for a variety of liquids.

Fig. 811 Flow Indicator — Fig. 54A Flow Sight — Fig. 816 Teleflo Indicator

BOWSER, INC.
1381 Creighton Ave., Fort Wayne 2, Indiana

Liquid Handling Specialists Since 1885

▲ For more details circle NED-181 C4 on enclosed inquiry slip ▲

STRAPPING BREAKER cuts straps up to 2-in. wide

Designed for breaking steel strapping used on shipping containers, Buster strapbreaker is durably constructed of heat treated forged steel and will cut straps up to 2-in. wide. It weighs about 2¾ lb and is furnished with a plastic grip. It is about 19-in. long. In use, tapered point is inserted under the strap and pushed to the base of the cutting slot. An easy pull or push then cuts the strap cleanly, without hazard from flying sharp edges. Made by **Lidseen Co.,** 827½ S. Central Ave., Chicago 44, Ill.

▲ For more details circle NED-182 C4 on enclosed inquiry slip ▲

PLATE-TYPE COIL for heating and cooling

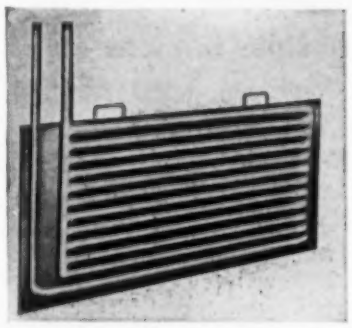


Plate-type coils for heating and cooling purposes are simple to clean and easily installed. Light in weight, they are available in standard and special sizes and shapes and in a wide range of materials including stainless steel, Monel, and other special alloys and finishes. They are available in parallel type for steam application or in series type for heating and cooling fluids. Made by **Dean Products, Inc.,** Thermo-Panel Div., 616 Franklin Ave., Brooklyn 38, N. Y.

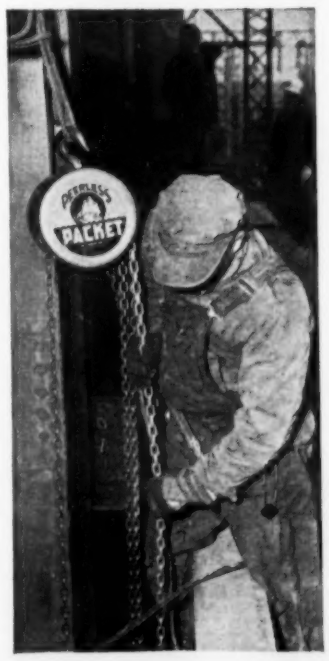
▲ For more details circle NED-183 C4 on enclosed inquiry slip ▲

TAG & LABEL PRINTER reproduces 100 units per minute

Gummed labels, tags and cards can be printed at 100 units per minute in as many as five colors at one time by the Duplicopy Printer, a compact spirit process machine. Anything typed, written or drawn on the master unit can be printed, even on string or wire tags. Sizes up to 4 x 7 in. can be reproduced. Machine features automatic feed, rubber suction feet, sealed-in-oil bearings and 13-lb weight. Made by **Duplicopy Co.,** Dept. N-2, 224 W. Illinois St., Chicago 10, Ill.

▲ For more details circle NED-184 C4 on enclosed inquiry slip ▲

Construction workers like lightweight Aluminum Packet Hoists too



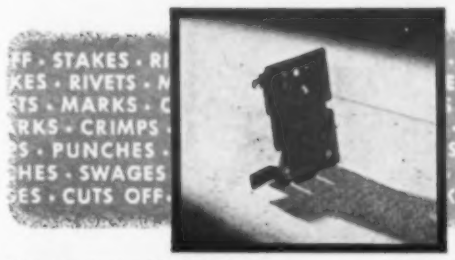
The steamfitters, boilermakers and ironworkers on this construction job make the same comment, "We like these hoists because their light weight permits us to carry them from job to job more easily."

Not only are these hoists much lighter than all-steel hoists, but also they are just as strong and efficient. If you have lifting problems in your plant—particularly where hoists must be moved from place to place for maintenance work or miscellaneous lifting—ask your Harrington distributor for detailed information. His name is listed in the classified telephone directory under "Hoists." Or write for Bulletin P-5.

HARRINGTON PEERLESS HOISTS
THE HARRINGTON CO., 1650 W. Callowhill St., Phila. 30, Pa.
Makers of Hoists Since 1876

▲ For more details circle NED-185 C4 on enclosed inquiry slip ▲

ELECTROSTAKE CUTS COSTS at Eastman Kodak



The Eastman Kodak Company uses ELECTROSTAKE—the automatic solenoid-operated staking machine—to stake shutter parts for Brownie Hawkeye cameras. ELECTROSTAKE presses the assemblies together—then *automatically* delivers the staking blow. Better control of the impact cuts scrap . . . and because ELECTROSTAKE is faster and simpler to use, operators are able to stake far more shutter parts than they could on foot-powered machines.

Delivers impacts up to 3500 lbs.—hold-down pressure can be pre-set from 0 to 20 lbs. Economical to buy, operate and maintain. Plugs into any 115 V., A.C. outlet.

Write — or phone Bigelow 4-6370 — for folder showing complete line of Black & Webster electric production tools.

BLACK & WEBSTER, INC.
Dept. 1, 445 Watertown Street, Newton 58, Mass.
Solenoid-operated Production Tools

▲ For more details circle NED-186 C4 on enclosed inquiry slip ▲

Which truck is best for your needs?

YALE MAKES THEM ALL!

. . . and there's a YALE Truck with the capacity you need from 1,000 to 100,000 lbs.

YALE has a Truck with fuel, capacity, and interchangeable attachments . . . exactly suited to your particular handling needs. And, every YALE Truck is quality built . . . designed to save time, space, manpower . . . slash handling costs in half and then in half again.

Any YALE Truck you need can now be acquired under a flexible "3-Way-Finance-Plan". Ask your YALE representative for details. Or mail the coupon.

YALE*

INDUSTRIAL TRUCKS AND HOISTS
*Reg. U. S. Pat. Off.

MAIL THIS COUPON TODAY

The YALE & TOWNE Manufacturing Co., Dept. 373
Roosevelt Boulevard, Philadelphia 15, Penna.

☐ Please send me the Picture Story of Yale Materials Handling.
☐ Please have your representative call.

Company_____
Name_____ Title_____
Street_____ City_____ State_____
In Canada write: The Yale & Towne Manufacturing Company St. Catharines, Ontario, Canada

Gas, Electric, Diesel & LP-Gas Industrial Trucks
Worksavers • Hand Trucks • Hand & Electric Hoists • Pul-Lifts

▲ For more details circle NED-187 C4 on enclosed inquiry slip ▲

SAVE UP TO $1,000.00
ON YOUR NEXT GAS FORK TRUCK PURCHASE

BAKER "Yardloader" 4000 POUND CAPACITY

● Here's a fork truck built for rugged outdoor service. Large pneumatic tires, exceptionally high ground clearance and oscillating rear axle permit its operation on unimproved or semi-improved ground surfaces. Powerful heavy-duty industrial engine, extra-heavy drive axle, and 4-speed transmission assure ample power for rough work. Travel speed approaching 14 MPH in high gear enables it to cover large areas efficiently. Hydraulic lift permits stacking to 122 inches.

But the outstanding feature of the Yardloader is its amazing low price—about 25% under any other gas truck in its capacity.

Get all the facts—and save up to $1,000.00 on your next gas fork truck.

Baker industrial trucks

THE BAKER-RAULANG COMPANY
1245 WEST 80th STREET • CLEVELAND 2, OHIO

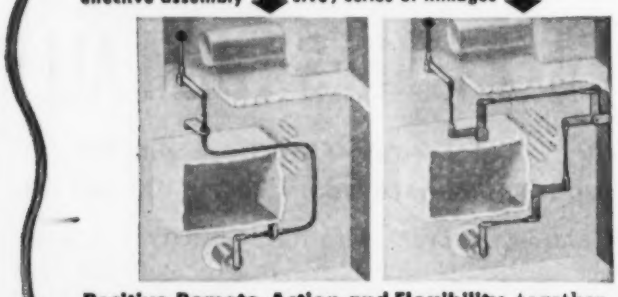
▲ For more details circle **NED-188 C4** on enclosed inquiry slip ▲

IMPROVED OPERATION OF LITERALLY HUNDREDS OF MECHANICAL PRODUCTS HAS BEEN EFFECTED WITH ACCO TRU-LAY FLEXIBLE PUSH-PULL CONTROLS

Tru-Lay Push-Pull Controls provide POSITIVE REMOTE-ACTION over long or short distances . . . with fixed or movable anchorages . . . for light loads or loads up to 1,000 lbs., and these units are frequently and successfully used in conjunction with Electric, Hydraulic and Air Controls.

Flexibility makes it possible to snake around obstructions . . . simplifies installation . . . reduces the number of working parts . . .

to give you this simple and effective assembly ↓ **. . . rather than this complex (and expensive) series of linkages** ↓



Positive Remote-Action and Flexibility, together with Precision and Long Life, explain why TRU-LAY PUSH-PULLS serve designers and users equally well in improving machine operations, whether the application is on such severe service jobs as Bulldozers, Power Shovels and Steel Mill Machinery, or on such light duty work as Photographic Equipment, X-Ray or Business Machines.

Immunity to Vibration makes these TRU-LAY PUSH-PULLS ideal as Remote Controls on shakers and other vibratory products.

Complete Protection Against Dirt and Moisture is a big factor in the use of this unit on machinery in Coal Mines, Cement and Steel Mills, Oil Fields and in many other industries.

Corrosion-Resistance of the unit, plated or with Stainless Steel construction as required by the use, has led to many applications in the Marine Field . . . salt water or fresh. Supplied with a rubber cover the unit operates effectively even when conduit is COMPLETELY IMMERSED.

Lubrication of the inner working member is for life.

Temperatures as low as −70° F. will not hinder the proper operation of this unit, and it is throughly effective even in the extreme high temperatures encountered on Jet Engine, Furnace Door and Glass Furnace Damper control applications.

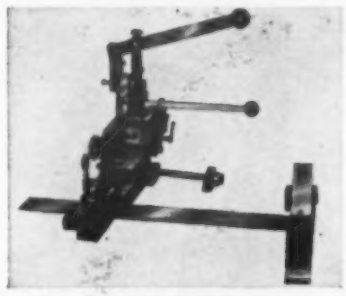
This **IDEA FILE** *will answer most of the questions you may have in mind as to how you might make additional applications of this versatile and dependable tool. Write for a copy, without obligation.*

DATA FILE

ACCO
AUTOMOTIVE and AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE
601 Stephenson Bldg., Detroit 2
2216 South Garfield Ave., Los Angeles 22 • Bridgeport 2, Conn.

▲ For more details circle **NED-189 C4** on enclosed inquiry slip ▲

PROFILE TRACER
attachment fits on standard lathes



Bar stock itself serves as driving link between lathe and screw machine spindle of this Turn-Mat profile tracer attachment for lathes. Bar stock in rounds, squares and hexagons of metals and plastics from 1/32 to 3½-in. diameter can be turned, formed and sized in unlimited lengths. Straight and taper shapes can be turned to tolerances within 0.0005. Self-aligning spindle rotates in precision bearings. Bar stock is held firmly and concentric in spring collet which is adjusted to the proper tension for the stock to rotate and yet slide longitudinally through the collet. Unit attaches to lathe with single tie bolt through the compound rest. This also centers and aligns the cutting tools. Made by **Turnomat Co.,** Dept. 13, Brockport, N. Y.

▲ For more details circle **NED-190 C4** on enclosed inquiry slip ▲

POWERED FLOOR SWEEPER
uses turbine principle to clean air

Turbine principle incorporated in the Turbo-Sweep powered floor sweeper sucks dust from the air at the rate of more than 300 cfm while heavy duty fiber brushes are sweeping debris into its collecting hopper. Only 10 seconds are required to remove and empty the hopper. Dust collecting bag has capacity of 1.6 cu ft. Throttle, hopper, brush height and clutch controls are within easy reach of the operator. Easily maneuvered, self-propelled sweeper has casters and rubber tired, ball bearing wheels and is powered by a 2-hp Briggs & Stratton gasoline engine equipped with a Maxim silencer. The 28-in. sweeping width permits normal cleaning of over 30,000 sq ft of floor area per hour. Made by **Parker Sweeper Co.,** 6 Bechtle Ave., Springfield, O.

▲ For more details circle **NED-191 C4** on enclosed inquiry slip ▲

DO YOU KNOW? Color etched nameplates in quantities from 1 to 100 can be processed in a single day by use of new techniques. Nameplates can be in wide range of metals and alloys, square or rectangular in shape, with any finish and in any color. Customer must supply the artwork for this fast service, but complete etched nameplate service is also available from Nameplates, Inc., 425 E. 101st St., Brooklyn 12, N. Y.

▲ For more details circle **NED-192 C4** on enclosed inquiry slip ▲

YOU'RE SAFE WITH THE
NEW SUPER-TOUGH
WILLSON SAFETY HAT

THE NEW WILLSON SAFETY HAT is entirely new in design, material and method of manufacture . . . tough as metal and more resilient! Here are some other outstanding features of the new Willson Super-Tough* Safety Hat:

Streamlined Contour—deflects objects more effectively and provides a greater safety "pocket" inside.

New Suspension Design—adjustable "hammock" headband is suspended *inside* at 6 points. No exposed rivets or lacing—no holes through hat.

Comfortably Cool—space between headband and shell provides ample air circulation for wearer.

Five Colors—green, red, yellow, brown or white . . . to provide job or company identification.

Passes all required tests with an extra margin of safety!

More than 300 safety products carry this famous trademark

WILLSON Established 1870

Write for your copy of the new bulletin describing the Willson Super-Tough* Safety Hat.

*trademark

WILLSON PRODUCTS, INC., 219 Washington Street, READING, PENNA.

▲ For more details circle **NED-193 C4** on enclosed inquiry slip ▲

SPACE SAVING!

penco

16-Person
BOX LOCKER ECONOMY UNIT

Costs just pennies per person, per year of service. Only 9 sq. ft. of floor space. Private storage for hats, lunches, purses. All steel.

OPTIONAL!

AIR-LITE DOORS
Open mesh for maximum ventilation, sanitation, visual inspection through locked doors!

WRITE FOR PRICES

PENN METAL
Corporation of Penna.
82 OREGON AVE.
PHILA. 48, PA.

STEEL LOCKERS CABINETS SHELVING • 86TH YEAR!

▲ For more details circle **NED-194 C4** on enclosed inquiry slip ▲

Wolverine
Heavy Duty QUICK ACTION TOGGLE CLAMPS

***Extra* CLEARANCE**
***Extra* SPEED**

Rugged construction—drop forgings, cast steel and solid bar stock.

• • •

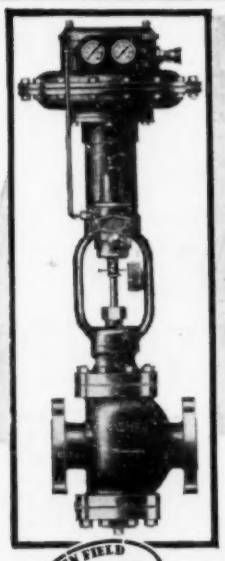
Wolverine Toggle Clamps also available in several types and sizes of Standard Action and Push Action units.

• • •

Wolverine Clamps are in use in almost every major industrial field and are specified by prominent engineering firms. Write for Bulletin.

WOLVERINE TOOL CO.
1482 E. WOODBRIDGE
DETROIT 7, MICHIGAN

▲ For more details circle **NED-195 C4** on enclosed inquiry slip ▲



FISHER

WIZARD CONTROLLERS

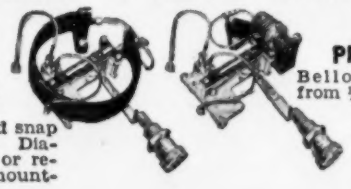
YOU'LL ALWAYS SEE THEM WHERE RELIABILITY COUNTS AND DEPENDABILITY IS A MUST

IN FIELD PROVED SERVICE

The ingenious, simply-designed mechanism of Fisher Wizard Controllers provides extreme accuracy and dependability in pressure control. They are individually built to meet your exact operating conditions, and are guaranteed to give satisfactory performance.

THE "BRAINS" OF WIZARD CONTROLLERS

HIGH PRESSURE
Bourdon tube pressures from 5 to 10,000 P.S.I. Throttling and snap acting types. Diaphragm, yoke or remote panel mounting.

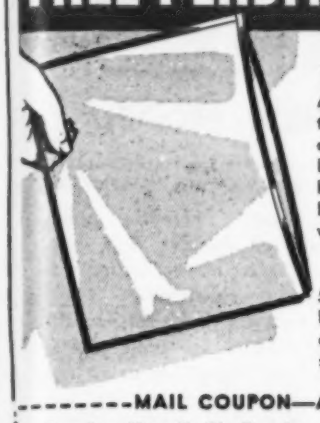


LOW PRESSURE
Bellows pressure from ½ to 15 P.S.I. Diaphragm, yoke or remote panel mounting.

FISHER GOVERNOR COMPANY • Marshalltown, Iowa

▲ For more details circle **NED-196 C4** on enclosed inquiry slip ▲

WANTED
5,000 MORE PLANT MANAGERS TO ASK FOR
FREE PLASTIC ENVELOPE



TO PROTECT JOB-TICKETS

Ask for *FREE* transparent envelope that keeps your work records safe, clean, and readable. Don't gamble with dirty fingerprints that hold up production. And don't let a grease spot raise havoc with your instructions.

SEND NO MONEY

50 sample work-sheet envelopes handed to your operators will convince you better than one sample.

MAIL COUPON—AND SAVE 30%

American Kleer-Vu Plastics, Inc.
53-06 Grand Avenue, Maspeth 78, N. Y.

Please send us 50 Kleer-Vu acetate envelopes, 10" x 12½", .005 gauge, with sewn edges, to protect factory tickets from smudging and tearing . . . If 100% satisfied, we will honor your invoice for only $9 (regular price $13). If not, we will return envelopes at your expense.

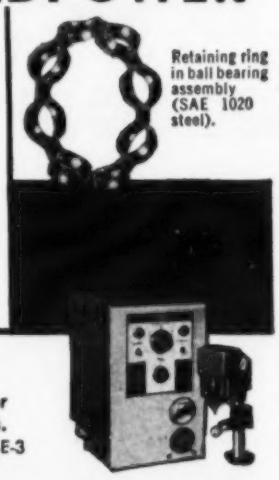
For more details circle NED-197 C4 on enclosed inquiry slip

Better Welds cost less with

120 welds in this ½" long bridge structure for radio tube. Molybdenum wires, nickel rim supports, molybdenum center wire.

RAYTHEON **WELDPOWER®**

Production goes up as rejects go down with Raytheon Weldpower Units on the job. By producing cleaner, stronger, more accurate welds in less time, Weldpower Units quickly pay for themselves in a better product at less cost. Let us show you how Weldpower can save you money in welding small precision parts.



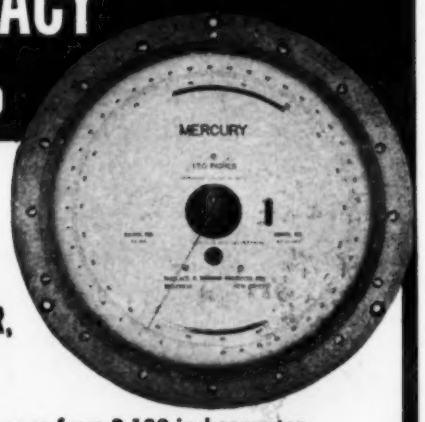
Retaining ring in ball bearing assembly (SAE 1020 steel).

Send samples or write for complete information. Address Dept. 6270-NE-3

RAYTHEON
Excellence in Electronics
RAYTHEON MANUFACTURING COMPANY
Equipment Sales Division, Waltham 54, Mass.
DISTRICT OFFICES: Boston • New York • Cleveland • Chicago
New Orleans • Los Angeles (Wilmington) • San Francisco • Seattle
INTERNATIONAL DIVISION, 19 RECTOR STREET, NEW YORK CITY

For more details circle NED-198 C4 on enclosed inquiry slip

PRESSURE Measurement ACCURACY 0.1%



W&T PRECISION DIAL MANOMETER, FA-145

Ranges: All ranges from 0-120 inches water through 0-250 inches Hg. in two revolutions—45 inch scale.

Write today for Publication No. TP-30-A A-96

WALLACE & TIERNAN
ELECTRICAL MECHANISMS AND PRECISION INSTRUMENTS
Belleville 9, New Jersey . . . Represented in Principal Cities
In Canada, Wallace & Tiernan Products, Ltd.—Toronto

For more details circle NED-199 C4 on enclosed inquiry slip

STEEL STACKING RACK for floor-to-ceiling storage

Permitting utilization of all storage space from floor to ceiling, steel stacking rack is designed to accommodate specific pallet sizes for storage of unstable and semi-stable loads that would tend to tumble or crush themselves if stacked without racks. Rack is built with flanged legs so that each unit will have complete rigidity when resting on another below. Capacities vary according to size, unit illustrated being capable of handling 1500 lb. Steel side bars hold rack contents in position, while allowing contents to be readily identified. Made by **Leebaw Mfg. Co.,** Dept. A, 67 Wayne Ave., Youngstown 2, O.

For more details circle NED-200 C4 on enclosed inquiry slip

RETAINING STRIPS for packaged carload shipments

Extensive damage to ladings in transit, traceable to jamming at freight car doorways, can be prevented by use of Signode retaining strips. They consist of heavy waterproofed kraft paper laminated over two bands of steel strapping, made 18 in. wide and 88 or 108 in. long. Visible nail holes simplify nailing of these strips to the car, making them fit snugly against the doorposts to fill the gap and keep packaged shipments from side shifting into the doorway. Two types of strips are offered. Duplex strips are split in the middle and draped back against the car side while loading, then are joined, tensioned from either side and sealed. Standard strips are made in one piece. Made by **Signode Steel Strapping Co.,** Dept. 66 NED, 2643 N. Western Ave., Chicago 47, Ill.

For more details circle NED-201 C4 on enclosed inquiry slip

DO YOU KNOW? "Whatever We Do" is 16-mm sound-color documentary film about the atmospheric gases such as oxygen, nitrogen, argon and helium. Covered are key uses in industry as well as the innumerable ways in which they appear in our daily lives as part of familiar products. This nontechnical film is available on loan basis for showing to group meetings. Write to Air Reduction Sales Co., Dept. NED, 60 E. 42nd St., New York 17, N. Y.

For more details circle NED-202 C4 on enclosed inquiry slip

IN GEROTOR HYDRAULIC PUMPS AND MOTORS . . . THE GEROTOR* MAKES THE DIFFERENCE

The patented Gerotor principle is represented by a pair of gear-shaped elements, one within the other. In pumps, power is applied through the shaft to the inner Gerotor and is transmitted in the closed mesh region to the outer Gerotor; in motors, the same principle operates in reverse.

Each tooth of the inner Gerotor is in sliding contact with the outer Gerotor at all times, providing continuous fluid-tight engagement at very low contact speed. The contact points revolve only once in seven to nine revolutions, depending on the type of unit. This reduced friction permits higher shaft speeds, assures longer life. Opening and closing of chambers between the teeth is gradual across long ports, eliminating sudden shock and excessive turbulence, and reducing pressure variations found in conventional gear pumps. In Gerotor hydraulic pumps and motors, the Gerotor principle produces high volumetric and mechanical efficiency.

Whatever your need in hydraulic pumps or motors, consult the Gerotor May engineers. Write for free literature.

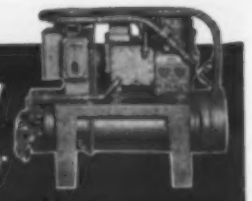
GEROTOR MAY CORP., BOX 86, Baltimore 3, Md.

GEROTOR
HYDRAULIC PUMPS & MOTORS

*Gerotor is not just a name . . . it's the heart of the finest hydraulic pumps and motors made.

For more details circle NED-203 C4 on enclosed inquiry slip

Mold Cooling by Acme FLOW COLD saves money 3 ways



* increases production
* cuts down time
* reduces scrap

at Excelsior Plastics Co.

When the Excelsior Plastics Company of Excelsior Springs, Missouri, decided to install a refrigeration unit to be used in their plastics molding process they ran into the problem of extremely variable loads. After deciding that a direct expansion water chiller was the best solution, they selected an Acme Flow-Cold Packaged Liquid Chiller. The Flow-Cold maintained the water within a plus or minus 2 degrees of the desired operating temperature. The company states that the addition of the cooling unit has increased production, decreased rejects and by cooling the oil, at the same time it cools the mold, has cut down time.

Write Dept. F.C. for more information on this easily installed packaged unit.

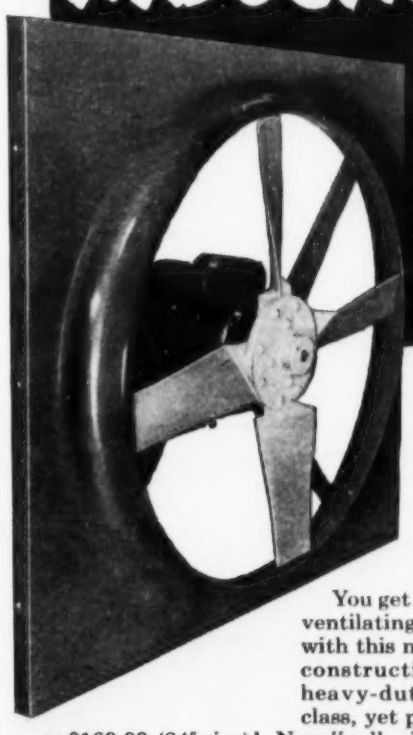
*Trade Mark

ACME INDUSTRIES, INC.
Flow-Cold Division, JACKSON, MICH.
Continuously serving the Air Conditioning and Refrigeration Industries since 1919

For more details circle NED-204 C4 on enclosed inquiry slip

Cuts the cost of heavy-duty ventilation!

NEW R&M Direct-Drive INDUSTRIAL FAN



5 Sizes 24" to 48"

5400 to 36000 CFM

You get extra cooling and ventilating power per dollar with this new fan! Its rigid construction puts it in a heavy-duty propeller-fan class, yet prices start as low as $160.00 (24" size)! New "gull-wing" blades, combined with an improved air inlet, set new highs in efficiency. Installation is easy, maintenance costs low. Whatever your ventilation problem—industrial, commercial or military—it will pay you to circle the enclosed inquiry slip now!

- Direct Drive reduces maintenance costs
- "Gull-Wing" airfoil blades for uniform pressure and added strength
- Square steel frame forms easy-mounting panel
- Aluminum alloy blades—non-rusting, non-crystallizing, non-overloading
- Heavy-continuous-duty motor. Ball bearings permanently lubricated and sealed (Information on explosion-proof motors available on request)
- Automatic shutters to fit all fan sizes
- Streamlined air inlet for greater efficiency

SEND THE INQUIRY SLIP TODAY!

ROBBINS & MYERS FANS for 1954

Robbins & Meyers, Inc., Fan Division
387 So. Front St., Memphis 2, Tenn. ND-34

For more details circle NED-205 C4 on enclosed inquiry slip

Chicago MOUNTED Wheels

...now even better with

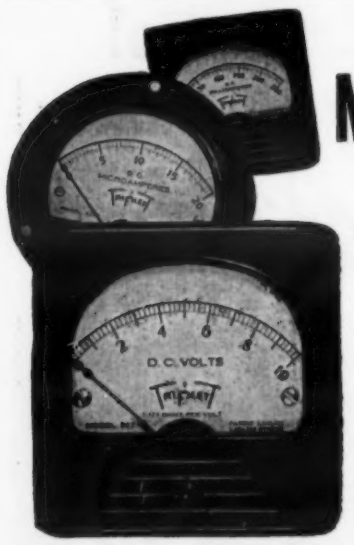
79E BOND

Buy Chicago Mounted Wheels—bonded with 79E Bond—and you'll never use any other!

79E—a tough new bond exclusive with Chicago Wheel—is the sensation of the industry . . . it does a BETTER grinding, burring, and finishing job FASTER. A size and shape for every use. Deliveries are excellent—Order today.

CHICAGO WHEEL & *Mfg. Co.*
Dept. NED • 1101 West Monroe Street, Chicago 7

▲ For more details circle NED-206 C4 on enclosed inquiry slip ▲



MODERNIZE WITH TRIPLETT METERS

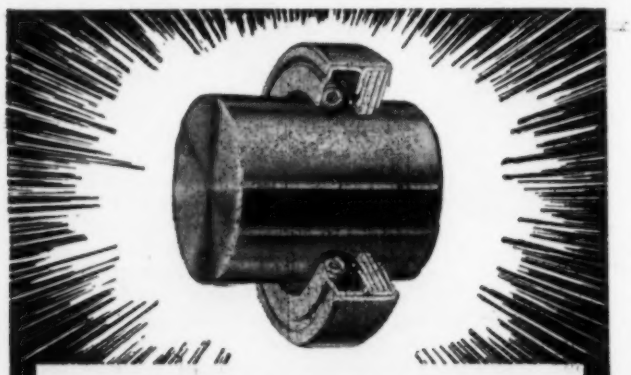
A SIZE, TYPE, AND STYLE FOR EVERY INSTALLATION

Your instrumentation is strictly modern in design and construction with Triplett Meters. You can have sizes 2" to 7" in a wide variety of case shapes and mounting arrangements, A.C., D.C., R.F., Rectifier or Dynamometer. Molded and metal cases, rear illumination, and other special features are available. For precision and economy virtually every meter part is made in Triplett plants under rigid humidity and dust control. Every meter represents the refinements gained in half a century of meter experience. Keep *your* panels up-to-the-minute with Triplett Meters—famous the world over for quality, accuracy, and dependability.

Triplett Electrical Instrument Co.
Bluffton, Ohio, U.S.A.

TRIPLETT

▲ For more details circle NED-207 C4 on enclosed inquiry slip ▲



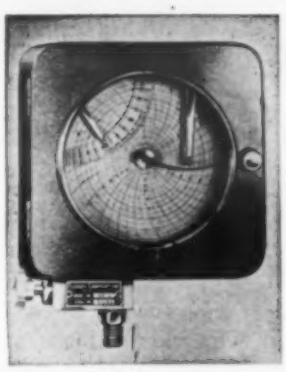
AMERICAN FELT REALLY SEALS!

Above is an OilFoil seal, consisting of two layers of felt, bonded with two septums of Hycar, the synthetic rubber-like substance that is impervious to and unaffected by oils, greases, and the hydrocarbons used in hydraulic systems. Such washers can have one, two, or three septums, to keep lubricants in and seal out water, dirt, gases and retain pressures. If there is no lubricant in the enclosure, the felt can be impregnated with oil or grease, to provide lifetime bearing lubrication. OilFoil seals are supplied cut to exact dimensions, ready for assembly, and usually require no attention between major overhauls. For more information, write for Data Sheet No. 11, "Felt Seals, Their Design and Application." Free. Oil Foil T.M. Reg.

American Felt Company
TRADE MARK
62 GLENVILLE ROAD, GLENVILLE, CONN.

▲ For more details circle NED-208 C4 on enclosed inquiry slip ▲

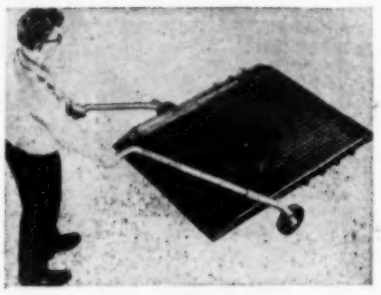
FLOW METERS indicate, record Argon gas usage



Gaging the cost of Argon gas consumption in welding is made possible by this indicating and recording flow meter. Instrument is available in several ranges up to 0 to 100 cu ft per hour and in chart speeds of 8, 12 and 24 hours. They can be connected to any cylinder or piped system, require no electrical connection or lubrication and have integral needle valve. Meters weigh only 4 lb and measure 5¾ x 2⅞ in. Larger instrument utilizing same metering vane principle, with 10-in. chart and range of 0 to 100 cu ft per hour, is also available for either oxygen or Argon. Made by **Elematic Equipment Corp.**, Dept. 101, 6731 S. Chicago Ave., Chicago 37, Ill.

▲ For more details circle NED-209 C4 on enclosed inquiry slip ▲

PORTABLE DOCK PLATE has wheels and handle

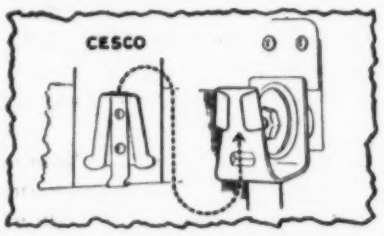


One man can move this steel dock plate from application to application safely and easily. Used to bridge the gap between loading dock and truck, it is fitted with wheels and handles which swing out of the way when the plate is in use. Several sizes are available. Made by **Woodford Hydrant Co.**, 1627 Delaware St., Des Moines, Iowa.

▲ For more details circle NED-210 C4 on enclosed inquiry slip ▲

SAFETY EQUIPMENT MOUNT for head, face and eye protection

Basis for combinations of a head gear and helmet, plastic shield or wire screen shield, or hard hat with the same protective equipment for protection of head, face and eye is the illustrated mounting device. It consists of wedge shaped brackets which slide together and lock securely, and which may be as quickly unlocked.



A tilting mechanism allows the user to raise or lower the helmet or shield. An adjustable tension spring compensates for difference in weight of the different pieces. Made by **Chicago Eye Shield Co.**, 2335 W. Warren Blvd., Chicago 12, Ill.

▲ For more details circle NED-211 C4 on enclosed inquiry slip ▲

NEW CLASS "B" insulation line anticipates smaller-motor trend

A comprehensive line of Class "B" insulation for motor windings is being developed by Irvington to meet the needs of the electrical industry for the high-temperature, space-saving insulations that will be required for the smaller frame sizes.

One of the many new types of Irvington class "B" insulation consists of Mylar bonded to asbestos paper.*

The new line — some members of which have already been placed on the market by Irvington—will consist of laminations of Mylar—a du Pont polyester film with a dielectric strength of 4,000 vpm—and asbestos paper, pure asbestos saturated with varnish, asbestos with inlaid glass fibers, Fiberglas** and other materials.

These new insulations, using a high-temperature Irvington adhesive, not only withstand temperatures above NEMA Class "B" specifications, but make possible additional space savings.

Irvington will provide test samples based on your specific requirements. Just write to: **Sales Mgr. Coating Div., Irvington Varnish and Insulator, Division Minnesota Mining & Manufacturing Co., 14 Argyle Terrace, Irvington 11, New Jersey.**

*T.M. Reg. U.S. Pat. off. by E. I. duPont De Nemours & Co., Inc.
**T.M. Reg. U.S. Pat. off. by Owens-Corning Fiberglas Corp.

▲ For more details circle NED-212 C4 on enclosed inquiry slip ▲

New "PULL-GEAR" SPEED-REDUCING PULLEY Increases Drill Press Capacity

NEW MODEL

Provides Correct Speed and Power to Drill Up to 1⅛" with ½ H.P. Motor

Amazing new internally geared speed reducer doubles drill press capacity. Greater power, greater efficiency, greater productivity.

Provides the correct speed and power for larger drilling, reaming, tapping and boring on light presses. Easily installed in five minutes. Adaptable to all type machines. Spindle speed range approx. 45 to 3000 RPM. Made in 3 motor shaft sizes: ½" - ⅝" - ¾". Write for literature.

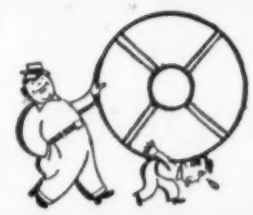
Some Territories Open to Jobbers

THE PULL-GEAR CO.
25425 Mound Rd. Centerline, Mich.

WRITE FOR LITERATURE

▲ For more details circle NED-213 C4 on enclosed inquiry slip ▲

Coil Handling Problem?



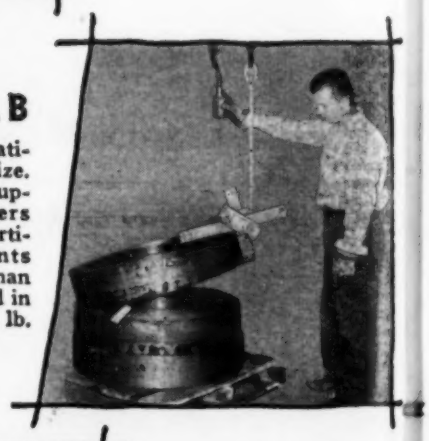
DIXON has the answer!

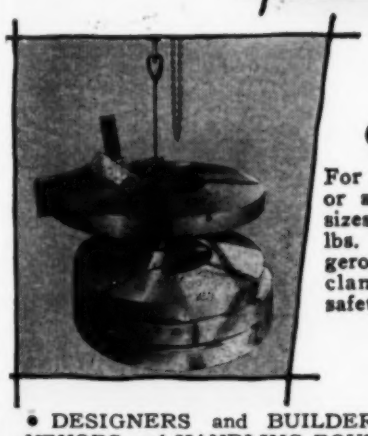
COIL HANDLER

Save space and avoid hazards by storing coils on end. Coils up to 48" wide can be lifted, turned and stacked. Available in 7,500, 10,000 and 15,000 lb. capacities.

COIL GRAB

Dixon Grab automatically adjusts to coil size. As crane hook moves upward the coil transfers from horizontal to vertical position. Prevents stock damage. One man can operate. Standard in 5 models up to 5,000 lb. capacities.





COIL LIFT

For ease in lifting, weighing, or stacking coils of varying sizes and weights up to 2,500 lbs. Pry-bars, chains, or dangerous makeshift hooks and clamps eliminated. Assures safety in handling.

• DESIGNERS and BUILDERS of SPECIAL CONVEYORS and HANDLING EQUIPMENT. Difficult problems requiring originality should be referred to our engineering department for quotation.

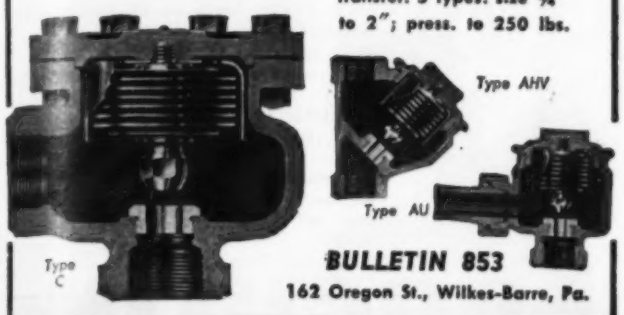
DIXON *Automatic Tool Inc.*
2303 TWENTY-THIRD AVE.
ROCKFORD • ILLINOIS

▲ For more details circle NED-214 C4 on enclosed inquiry slip ▲

Nicholson Steam Traps

CUT HEAT CYCLE from 45 to 27 min.

"One of the best savings we've made in some time", stated the plant engineer of a large mid-west processing plant after Nicholson thermostatic steam traps replaced mechanical units, cutting average heating cycle of important equipment 40%. Credit is given the higher, more even temperatures Nicholson traps effect. 2 to 6 times average drainage capacity. See why leading plants are increasingly standardizing on Nicholsons for faster heat transfer. 5 types: size ¼" to 2"; press. to 250 lbs.



BULLETIN 853
162 Oregon St., Wilkes-Barre, Pa.

W. H. NICHOLSON & CO.
TRAPS · VALVES · FLOATS

▲ For more details circle NED-215 C4 on enclosed inquiry slip ▲

SERVICE LIFTABLE

A hand truck, it rolls easily on Forgeweld Casters and Wheels. A lifter, it handles a ton with a few turns of a crank. A work table, it is adjustable, portable and has a sturdy steel top. Top is 26" x 43", raises from 28" to 42" with 2000 lbs. capacity. Use it in positioning dies, leveling work for press or mill, or in any of the "liftable" applications in your plant. Write today for full information.

• SEE SERVICE FOR SPECIALS

Service Liftables, Levelers and Electraulic Lifters range widely in capacity, size and performance characteristics. Versatile design permits most Service Lifting Equipment to be made up as low cost semi-specials to suit your needs.

INDOOR MILES Made EASIER and SAFER

SERVICE CASTER & TRUCK CORP.
Executive Offices: Albion, Michigan
Plants at Albion, Michigan & Somerville 43, Mass.
See Your Classified Telephone Directory For Nearest Distributor

▲ For more details circle NED-216 C4 on enclosed inquiry slip ▲

TAKES THE BLOW-OFF... CUSHIONS SHOCK

PENFLEX TUBING
ABSORBS THERMAL EXPANSION
...PREVENTS BLOW-OUT

WHEN SAFETY VALVES pop in this large industrial plant, a terrific surge of 900°F. steam blasts through the blow-off pipes under as much as 850 psi pressure. Ordinary pipe would blow apart. But Penflex Flexible Metallic Tubing has enough "give" to take the shock. Six lengths of 8" Penflex Interlocked tubing cushion the sudden impact . . . take up any pipe movement due to extreme temperature and pressure changes.

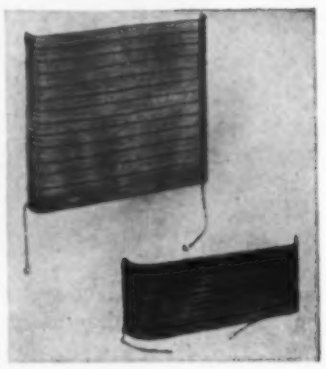
The Penflex Engineer can help you solve your tough tubing problems. A complete line of Penflex Flexible Metallic Tubing, Hose, and Couplings is at your disposal—4-wall interlocked and seamless welded corrugated tubing and metallic hose from ⅛" to 24" I.D. . . . automatic barrel fillers, pneumatic rivet passers, and fittings. Write for the new illustrated data book, "Flexineering."

Pennsylvania Flexible Metallic Tubing Company, Inc.
7208 Powers Lane, Phila. 42, Pa.

PENFLEX
HEART OF INDUSTRY'S LIFE LINES

▲ For more details circle NED-217 C4 on enclosed inquiry slip ▲

CONDENSERS for refrigeration purposes



Particularly suited for use in refrigerators and freezers, Kold-Hold condensers are constructed from thin expanded metal and tubing and are efficient, light weight and easy to install. Mounting brackets are not needed, and formed units can be so mounted as to provide a streamlined compressor shroud. Controlled atmosphere brazing, used in fabrication, keeps refrigerant passage clean, dry and free from leaks. Made by **Tranter Mfg., Inc.**, 510 E. Hazel St., Lansing 4, Mich.

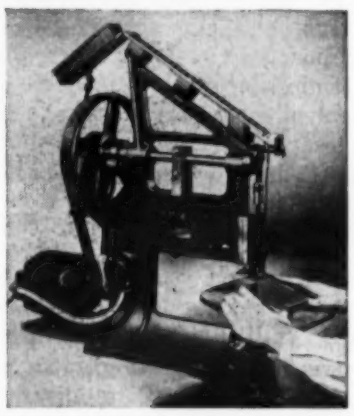
▲ For more details circle NED-218 C4 on enclosed inquiry slip ▲

LOW VOLTAGE THERMOSTAT rated 9/10-amp at 24 v or less

A magnetic-actuated mercury switch is incorporated in this Sensatherm low voltage thermostat which operates from radiant heat waves as well as true room temperature without aid of internal heaters. Operating differential is set at ±½° F. Electrical capacity is 9/10-amp at 24 v or less, and standard range is from 55 to 85° F. Special ranges available are 30 to 60° and 40 to 70° F. Made by **Mercoid Corp.**, 4223 Belmont Ave., Chicago 41, Ill.

▲ For more details circle NED-219 C4 on enclosed inquiry slip ▲

NAILING MACHINE drives nails, rivets or pins



Designed for driving nails, pins and rivets ranging in size from 3/16 to 1¼ in. into wood, plastic, soft metals and other materials, Milliken precision nailing machine is available with throat depths ranging from 6 to 10½ in. Its ¼-hp motor gives sufficient power to drive a No. 18 ¾-in. nail into solid lead, burying the head flush with the surface without previous punching, yet power is so readily controllable that machine is suitable for delicate work such as jewelry assembly. Nonskid diamond tooth work table is adjustable for height. Made by **Press Wireless Laboratories, Inc.**, Dept. N, 25 Prospect Pl., West Newton 65, Mass.

▲ For more details circle NED-220 C4 on enclosed inquiry slip ▲

MAKES BASEMENTS DRY!

Leaks in concrete walls, masonry, cinder block, etc., can be stopped quickly with FLEXTITE. Actually seals against water pressure. Efficient as a trowel coat for sealing off water and dampness. Transforms leaky basement walls into dry surfaces. Used in elevator pits, tunnels, dams, tanks, retaining walls, etc. (Minimum quan. 6 gal.)

MAIL COUPON for TRIAL OFFER

FLEXTITE

FLEXROCK COMPANY • Offices in Principal Cities
3603-F Filbert St., Philadelphia 4, Pa.
Please send me complete FLEXTITE information and details of TRIAL ORDER PLAN—no obligation.
Name ..... Title .....
Company .....
Address .....

▲ For more details circle NED-221 C4 on enclosed inquiry slip ▲

It will pay you to consider
"SUPER-SOAK" PARTS WASHERS
Proven So Satisfactory to Others

Simple—Practical.
Based on an old, proved principle.
No pumps, sprays, and no handwork.
For the removal of foreign substances, oils, grease, chips, etc., from metal parts.
A very satisfactory "job" at a low cost.

Please write for detail Circular.
THE SUPER-SOAK COMPANY, INC.
3770 South Pennsylvania Ave., Milwaukee 7, Wis.
Good Sales-territory still open.

▲ For more details circle NED-222 C4 on enclosed inquiry slip ▲

THE TORRINGTON COMPANY
Specialties Division
808 Field Street, Torrington, Conn.

TORRINGTON SPECIAL METAL PARTS
Makers of Torrington Needle Bearings

▲ For more details circle NED-223 C4 on enclosed inquiry slip ▲

Warpage of a $9.45 casting, due to clamp overtightening in a milling operation, was charged with 25 to 30 rejects daily at International Harvester Company, Louisville Works. PROTO Torquers eliminated this problem entirely. Other leading manufacturers are also effecting huge savings with this revolutionary tool. Ask your PROTO dealer for a demonstration. Send 10¢ for 68-page catalog to

PLOMB TOOL COMPANY

2275L Santa Fe Ave., Los Angeles 54, Calif.

TORQUER ADVANTAGES

- Fastest in World
- Automatic Torque-Limiting Release
- No Dials, Scales or Pointers To Watch or Break
- Both In-Lb. & Ft.-Lb. Models

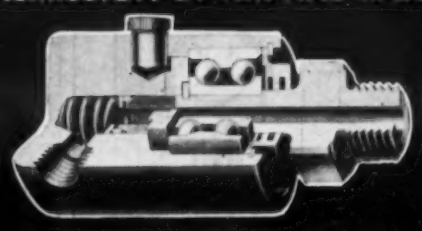
5482

PROTO TOOLS

Eastern Factory: Jamestown, N.Y.
Canadian Factory: London, Ont.

▲ For more details circle NED-224 C4 on enclosed inquiry slip ▲

FAWICK ROTORSEAL
PROVIDES TROUBLE-FREE TRANSMISSION OF AIR AND LIQUIDS



If your machine problem requires the transmission of air or liquids from stationary to rotating machine members, a FAWICK ROTORSEAL will provide the trouble-free, practical answer.

Precision-made ROTORSEALS are available in either single or multiple passage units, producing an absolute sealing of air, liquids, or gases under pressure. They are equally effective in vacuum applications. Thousands of installations have proved the high efficiency of FAWICK ROTORSEALS.

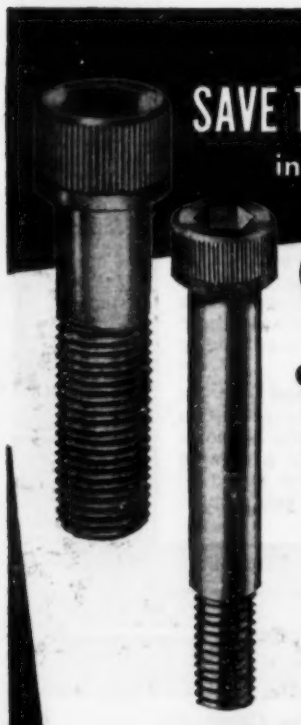
FAWICK AIRFLEX DIVISION
FEDERAL FAWICK CORPORATION
9919 CLINTON ROAD
CLEVELAND 11, OHIO

Write for ROTORSEAL Bulletin ML-6.

FAWICK Airflex
INDUSTRIAL CLUTCHES AND BRAKES

▲ For more details circle NED-225 C4 on enclosed inquiry slip ▲

See How To
SAVE TIME AND SPACE
in Die Assembly



DANLY

CAP SCREWS AND STRIPPER BOLTS

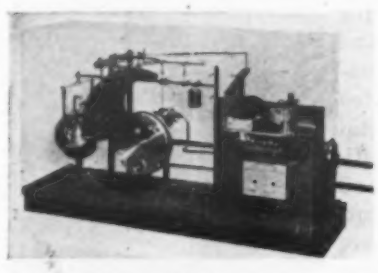
Easy-to-grip knurled socket head permits quick finger driving with minimum wrench tightening. Key-type socket facilitates quick "drawing-up" in awkward locations and allows more compact assembly. Precision machined . . . high-grade alloy steel . . . heat treated for optimum hardness and strength.

Send For This *FREE* Bulletin Today!

DANLY MACHINE SPECIALTIES, INC.
2100 South Laramie Avenue • Chicago 50, Illinois

▲ For more details circle NED-226 C4 on enclosed inquiry slip ▲

GRAVITOMETER
transmits specific gravity recordings



Gravitometer transmits accurate specific gravity recordings of liquids over any distance. Designated Arcco-Anubis Metameter, it has a Metameter telemeter transmission system which operates on any standard carrying circuit or channel such as telephone circuits or radio, the accuracy of which is unaffected by characteristics of the transmitting circuit or channel. Specific gravity range of the standard instrument is 0.15 or larger, but ranges as low as 0.05 can be furnished. Charts for different gravity ranges and special API charts are also available. Made by **American Recording Chart Co.,** 3109 E. Eleventh St., Los Angeles 23, Calif.

▲ For more details circle NED-227 C4 on enclosed inquiry slip ▲

TOWING TRACTOR
attachments increase versatility

Pusher and towbar plates, single or dual railway couplers, air compressor, switchman's platform and catwalk, hydraulically driven winch and four-wheel vacuum-booster brakes are among attachments and improvements available in four-wheel drive model TM Payloader towing tractor. Unit has a four-speed full-reversing transmission, torque converter drive and power steering as standard features. Couplings, one on each side of the rear plate, make it possible to handle cars while straddling either rail. Compressor can be used to provide emergency control of air brakes on cars being moved or to supply power for pneumatic tools. Power can also be supplied to vacuum brakes on trailers being hauled. Rear-mounted winch has a 30,000-lb line pull. Made by **Frank G. Hough Co.,** 746 Seventh St., Libertyville, Ill.

▲ For more details circle NED-228 C4 on enclosed inquiry slip ▲

DO YOU KNOW? The operating methods and design factors affecting good results in surface grinding, and the striking diversity in modern surface grinder applications are shown to advantage in 16-mm sound-color motion picture entitled "Techniques of Surface Grinding." All phases of grinding such as dressing and balancing of wheels, rigidity of machines, work cooling and use of formed wheels are covered. For showing, write to DoALL Co., 256 N. Laurel Ave., Des Plaines, Ill.

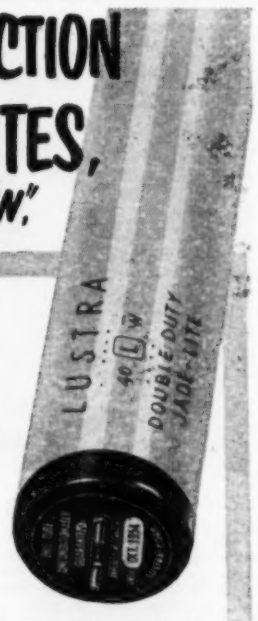
▲ For more details circle NED-229 C4 on enclosed inquiry slip ▲

"FASTER PRODUCTION WITH JADE-LITES,
thanks to the LUSTRA MAN",

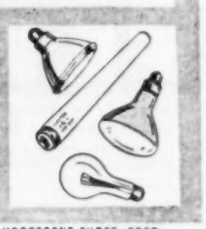
[*says The Philadelphia Thermometer Co.*]

Mr. L. W. Scanlan, General Mgr., reports: "Ordinary fluorescents in our production department caused annoying glare. Our local Lustra Man suggested Lustra Jade-Lite Fluorescents which eliminated both glare and eyestrain and speeded production importantly."

Your local Lustra Man can solve your lighting problems, too . . . and save you money at the same time. Write for literature giving the whole Lustra story. **Lustra Corporation, Dept. R-3, 36 Washington St., Brooklyn 1, N. Y.**



Lustra
AMERICA'S DATED LAMPS



DOUBLE DUTY REFLECTOR LAMPS, INCANDESCENT LAMPS, FLUORESCENT TUBES, SPOT-LITES AND FLOODLITES, RUGGED DUTY LAMPS, FLUORESCENT FIXTURES AND STARTERS

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CAN'T BEAT IT!

NEW - DIFFERENT LOADBINDER

LOOK! One handle assembly does the work of two conventional loadbinders. Each Laughlin loadbinder takes 4 sizes of clevis grab hooks. Use correct size hook to fit chain without nicking or slipping. Cut your inventory, insure long wear and safety. Unique design keeps jaws from spreading. Available in 2 sizes for ¼" to ⅜" chain. Drop forged and heat treated.

Available now from your industrial distributor. Write for 4-page folder with full details and user's comments.

LAUGHLIN
THE THOMAS LAUGHLIN CO.
319 Fore Street Portland, Maine

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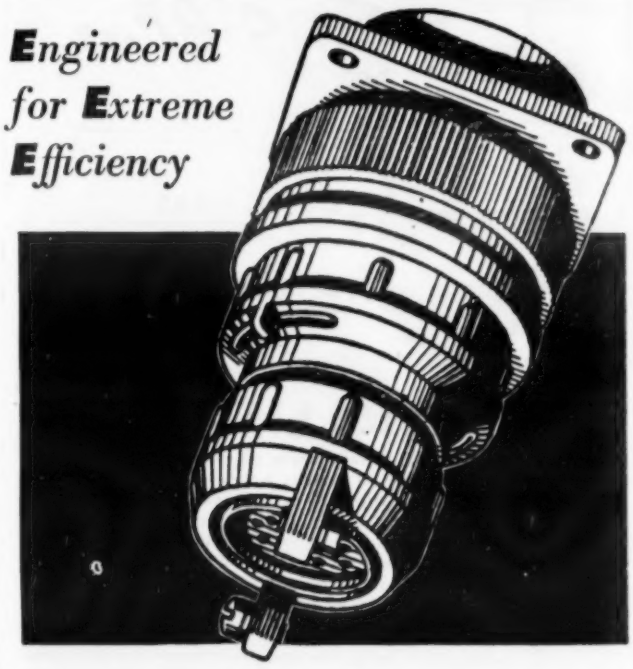
Engineered for Extreme Efficiency



the NEW AN-E ENVIRONMENT RESISTANT

Bendix
ELECTRICAL CONNECTOR

The extreme performance requirements of today's high altitude planes are responsible for the development of this new "E" type connector.

The challenge to protect sensitive airborne electronic circuits from thermal shock, surface condensation and extreme vibration has been successfully met by Bendix engineers in this new spaced grommet "E" connector.

This connector is not only designed for performance, but is also engineered for your production needs. The open space in the solder-well area provides ample room for all assembly and soldering operations. Moisture-proofing is accomplished without the use of potting compounds, permitting completely serviceable aircraft harness installations. These features are all accomplished with no appreciable increase in weight over an AN-A/B connector with a cable clamp.

Our Sales Department will be glad to furnish complete information on request.

FEATURES

- Moisture-proof
- Vibration-proof
- Pressurized
- Corrosion Resistant
- Serviceable

Bendix

SCINTILLA DIVISION of Bendix AVIATION CORPORATION
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Longer Life... Greater Accuracy WITH WENDT-SONIS Carbide Tools

Wendt-Sonis carbide tools are made of the finest materials to the highest quality workmanship to give you . . . longer tool life . . . greater accuracy. This has been proved in actual tests. Write today for your copy of the new catalog on the complete line of W-S carbide tools.

Also, get this new FREE Feed and Speed Calculator. Write Dept. NE-3.

WENDT-SONIS COMPANY
HANNIBAL, MISSOURI
576 N. Prairie Ave. Hawthorne, Calif. 5308 W. Diversey Chicago, Ill.

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For safe materials handling that can be quicker too,
Install rugged, no-skid Multigrip . . . that's the thing to do.
Then your floors are well protected and last for many a year,
And workers move faster without the slightest fear.
Multigrip lasts longer . . . won't splinter, crack or rot;
Wheels and feet won't slide or slip . . . whether it's wet or not.

U·S·S multigrip FLOOR PLATE

UNITED STATES STEEL CORPORATION, PITTSBURGH
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Sold by leading distributors from coast to coast 4-203A

UNITED STATES STEEL

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2 Seconds CAN SAVE YOU TWO HOURS!

Adjusting bevel gear mesh with a laminated shim is a matter of two seconds to remove a lamination!

The shim in this case is made of LAMINUM®, our exclusive material. It is a "solid" unit built up of 16 layers of .002 brass. It peels quickly and easily. Each shim removed adjusts the bevel gear position by two thousandths.

You save time by easier machining tolerances on the housing; *you save time* by eliminating pesky assembly machining; *you save* by not tying up a machine intermittently. IT'S EASIER!

SEND FOR LITERATURE

LAMINATED SHIM COMPANY, INC.

SHIM HEADQUARTERS SINCE 1913

Check Our Stampings Division For Your Stamped Parts Requirements

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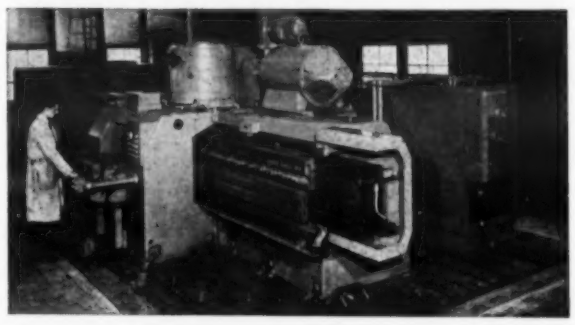
PROCESS TIMERS provide time-delay factor

Accurate, adjustable time-delay opening and closing of electric contacts are provided by line of type TSA-18 process timers used to control hydraulic presses, tire molds, heat treating ovens, sirens, mixing machines, signals, conveyors and other process equipment. Improvements include extra heavy nylon gears, overall construction of pure zinc alloys and dust-resistant cover. Timers are available in single-circuit or two-circuit models, any combination of which can be utilized to control three, four, ten or more circuits. They operate on 60, 50 or 25-cycle supply with contact rating of 10 amps at 120 v, or 5 amps at 240 v. Made by **General Electric Co.**, Schenectady 5, N. Y.

▲ For more details circle NED-236 C4 on enclosed inquiry slip ▲

BROACHING MACHINE 25-ton high speed model has maximum stroke of 130 in.

Wide range of broaching operations can be performed by the 25-ton model HM-25-130 machine, equipped with a standard high speed double-acting mechanical



drive and hydraulically actuated fixture. Ram speed of standard machine is infinitely variable from 30 to 150 sfm in both directions. Both ram speed and stroke length can be increased to meet higher requirements.

Width of ram is 24 in. and maximum stroke is 130 in. All electrical and hydraulic equipment meets JIC standards and automatic pressure lubrication is used throughout. Floor space required is 194 x 290 in., including all cabinets and motor-generator set. In one installation, this machine is removing metal at rate of 3¼ lb per 21-second cycle with depth of cut varying from $\frac{5}{32}$ to $\frac{3}{16}$-in. Made by **Colonial Broach Co.**, P. O. Box 37, Harper Station, Detroit 13, Mich.

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OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Dallas, Detroit, East Orange, Houston, Indianapolis, Kansas City, Knoxville, Little Rock, Los Angeles, Louisville, Mexico City D.F., Milwaukee, Montreal, Peoria, Philadelphia, Pittsburgh, Salt Lake City, San Francisco, Spokane, St. Louis, St. Paul, Toledo, Tulsa, Wichita

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YOU CAN DO IT FASTER with HANSEN ONE-HAND TACKER

MODEL T-1 TACKING TABLE TOPS

Only ONE of 1001 Uses

FASTER! With its zip-zip compound leverage action, Hansen saves time in all types of tacking and fastening. Fast, easy one-hand operation. Tacks fast as you grip.

BETTER! Balanced design insures accurate, precision driving. Powerful action drives each staple firmly and neatly in place for improved quality and increased holding power. It is adaptable to a wide variety of uses.

AT LESS COST! Hansen saves *time, steps,* and *materials* — operates faster — saves back-tracking — ready for instant, continual use.

(MODEL T-3-4 HANSEN TACKER)

36 DIFFERENT MODELS
80 STAPLE SIZES

REQUEST BOOKLET TODAY

A.L. HANSEN MFG. CO.
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FOR JOB-FITTED SOLUTIONS TO YOUR TIRE PROBLEMS

See your Goodyear Dealer — distributor of America's most complete line of Industrials

SOLID FACT FOR SOLID USERS
Use Goodyear's Famous All-Weather Tread Industrial Solid *(illustrated above)* for top traction and high resistance to cutting and chipping — even on rubber-damaging wet surfaces.

Whatever your particular industrial tire problems might be — tread — chipping — oil damage — insufficient traction, cushioning or flotation — the man to see for a cost-cutting solution is your nearby Goodyear Dealer.

He is not only experienced in dealing with these problems, he's also equipped to job-fit your operation from the most complete line of Industrial Tires in America today.

You'll find your Goodyear Dealer has over 100 different solid tire sizes plus a complete line of pneumatics and semi-pneumatics—all compounded in either UNiversal chip-resistant or OR Neoprene oil-, acid-, and chip-resistant compounds. What's more, he will specify the most efficient tread — smooth, grooved, All Service or the famous All-Weather — for your plant's floor surfaces.

And thanks to convenient warehouse location around the country, your Goodyear Dealer can promise quick service on your order.

Why not call your Goodyear Dealer soon? Or write Goodyear, Industrial Tire Sales, Akron 16, Ohio.

Use the right tire for the right job — use

GOODYEAR INDUSTRIAL TIRES

All-Weather, All Service—T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

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...making "cobra coils" out of stainless tubing?

Probably your fabricating problem is not so complex — but whatever it is — here's the "charm" to make it easy. It's the new Carpenter Bending and Coiling slide chart for Stainless Tubing and Pipe. Send for it today.

THE CARPENTER STEEL COMPANY
Alloy Tube Division, Union, N. J.

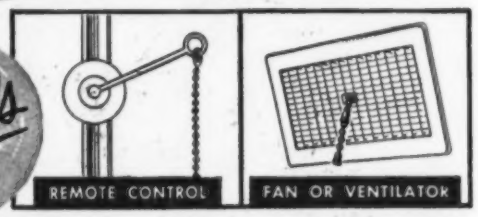
For more details circle NED-241 C4 on enclosed inquiry slip

DOES SO MANY THINGS ...so much Better!

Versatile BEAD CHAIN

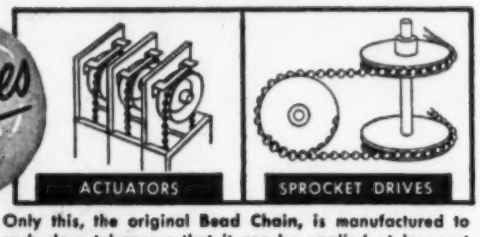
There are literally thousands of useful applications of BEAD CHAIN to all types of products, machines and tools! Consider how you may be able to take advantage of its versatility too! It pays dividends!

it Pulls



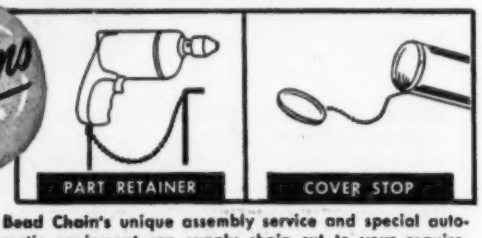
Bead Chain is available in 5 diameters from 3/32" to 3/8" with tensile strength ranging from 18 to 200 lbs. No matter what the requirement, our engineers can fill your need.

it Drives



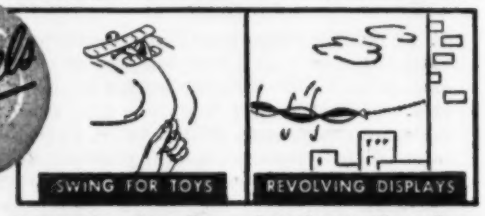
Only this, the original Bead Chain, is manufactured to such close tolerances that it can be applied at low cost to V-type or positive, non-slip sprockets. (Sprocket sources for your needs available on request.)

it Fastens



Bead Chain's unique assembly service and special automatic equipment can supply chain cut to your requirements, complete with attachments, at a substantial saving.

it Swivels



A large variety of couplings and attachments offer endless opportunities to design engineers to adopt Bead Chain without the necessity of special tooling and production.

B®

THE BEAD CHAIN MANUFACTURING CO.
BRIDGEPORT 5, CONN.
Send Me the Bead Chain Catalog.
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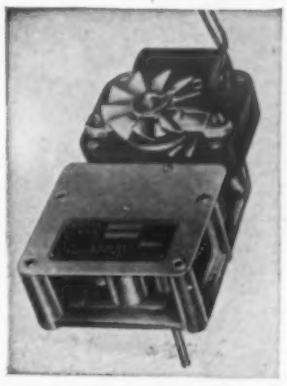
THE BEAD CHAIN MANUFACTURING CO., BRIDGEPORT 5, CONN.
Original and World's Largest Producer of Bead Chain

For more details circle NED-242 C4 on enclosed inquiry slip

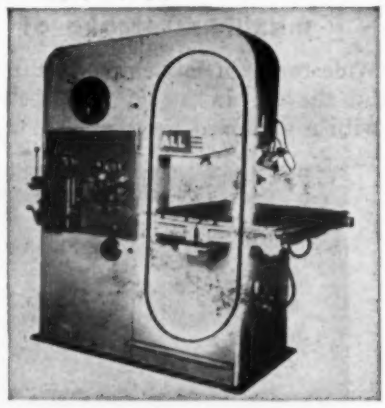
GEARED MOTOR
for outputs of 1 rpm and up



Compact speed reducer combined with shaded-pole type motor comprises model 300 geared motor for use in rotary display units, vending mechanisms, actuating devices and dispensers. Basic motor is two-pole induction type available in from 1/500 to 1/75-hp, depending on coil and stack size. Output speeds from 1 rpm and up are available. Typical unit with output of 9 rpm at 16-w input delivers full load torque of 150 oz-in. Power required is 115 v, 50/60 cycles, and shaft rotation can be clockwise or counterclockwise. Unit has porous bronze bearings and large oil reservoir, cooling fan, Nylon high speed gears, and vacuum impregnated paper layer coils. Made by **Loral Electronics Corp.**, Dept. 40, 794 E. 140th St., New York 54, N. Y.

For more details circle NED-243 C4 on enclosed inquiry slip

BAND SAW MACHINING
high speed steel band, semiautomatic machine permit fast production work



Efficiency and versatility of the band saw machining process is increased by Demon high speed steel bands used with a new line of semiautomatic machines. Blades are available in two tooth types, six pitches and widths ranging from ¼ to 1 in. Their red heat hardness permits two or three times greater cutting speeds than possible with carbon steel blades, while greater tensile strength allows heavier work feeds and chip loads. Hard-cutting steels such as stainless and chrome-vanadium can readily be machined and longer tool life and increased production result.

The band saw machines are designed to facilitate fast repetitive mass-production work. Hydraulic controls for feeds, speeds, saw guide post adjustment, tension, table position for angular cutting and braking are set at a centralized control panel. Finger tip control selects flood, mist or air jet coolant, and wide infinitely variable speed ranges are provided. Typical speed range is 40 to 10,000 fpm. Throat sizes of 16, 26, 36 and 60 in. are available. Made by **DoALL Co.**, 256 N. Laurel Ave., Des Plaines, Ill.

For more details circle NED-244 C4 on enclosed inquiry slip

PORTABLE MIXERS ... offer ECONOMY

Operating expenses dip to a new low when you choose Portable Mixers from the complete Eastern Series. Available from 1/20 to 5 H.P. with a variety of speeds and motor enclosures. Your small initial investment pays rich dividends in economy.

For complete mixer selection information write for Eastern Catalog 510-A

Eastern INDUSTRIES, INC.
REGENT ST., E. NORWALK, CONN.

For more details circle NED-245 C4 on enclosed inquiry slip

The shape of rings to come

It is difficult to predict the shape tomorrow's air power will take. But one thing is certain — fabrication of many of the component parts, such as rings, bands, and the complicated assemblies will be accomplished by welding.

If a new alloy — a special metal — an intricate assembly pose a problem to design or manufacture perhaps our specialized knowledge gained in 35 years of welding fabrication can help to find a practical and economical solution. Our Product Development Division will be glad to put experience gained from working with every major U. S. jet engine manufacturer to work for you. In addition to fusion and resistance welding of ferrous and non-ferrous metals, American Welding can provide designing, engineering, metallurgical and machining facilities. *Write us today for complete details.*

THE AMERICAN WELDING & MANUFACTURING CO.
170 DIETZ ROAD • WARREN, OHIO

For more details circle NED-246 C4 on enclosed inquiry slip

Send for this New, Free Catalog Today!

Learn How Roto-Finish Can Solve Your Finishing Problems at Lower Costs

Here's a new, fully illustrated catalog that shows you how you can improve the surface of your products at lowest costs with Roto-Finish, an original precision tumbling process. Learn how you can save money and manpower with Roto-Finish's wide choice of machines, equipment and materials that combine with Roto-Fninsh's Engineering Service and "know-how" to give you a practical solution to your finishing problems. Prove it to yourself. *Write for your free copy today.*

Roto-Finish COMPANY
associated with The Sturgis Products Co.
3702 Milham Rd., Kalamazoo, Mich., P. O. Box 988, Ph. 3-557
ORIGINATORS OF THE ROTO-FINISH PROCESS

For more details circle NED-247 C4 on enclosed inquiry slip

The All New MOBILIFT 4000 Pounder
Has Everything You Want in a "Sit-Down" FORK LIFT TRUCK

MODEL D-424
4,000 lbs. capacity at 24" Load Center
83" hydraulic mast lift height 108"

Check these trend-setting features...

- CHRYSLER 65-bhp 6 cyl. GAS ENGINE.
- CHRYSLER GYROL FLUID COUPLING.
- MOBILIFT CONSTANT-MESH TRANSMISSION with a Push-Pull Lev-R-Matic Control for forward and reverse — No Clutch Pedal — No Gears to Shift — 2 speeds forward, 2 reverse.
- MOBILIFT FULL-FLOATING DRIVE AXLE.
- BALL-BEARING WORM & NUT TYPE STEERING.
- HYDRAULIC BRAKES.
- EASY TO GET ON AND OFF — NO OBSTRUCTIONS.
- FREE ACCESS FROM LEFT OR RIGHT SIDE.
- ONE-PIECE HOOD RAISES FOR EASY SERVICE ACCESSIBILITY.

Write for complete details

LAMSON MOBILIFT CORP.
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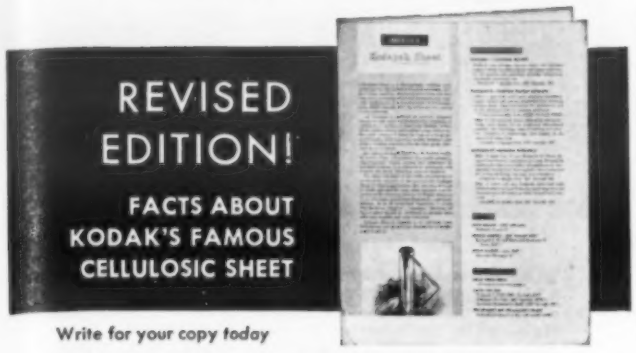
2317 W. 18TH, CHICAGO • 730 PATTERSON, E. RUTHERFORD, N. J.
2724 TAYLOR STREET, DALLAS • 2730 SAN PABLO AVE., BERKELEY
1113 SPRING STREET, N.W., ATLANTA

For more details circle NED-248 C4 on enclosed inquiry slip

QUESTIONS on plastic sheet? Kodak has ANSWERS!



Write for your copy today

IF you use, plan to use, or merely want to know more about plastic sheet, this data book belongs first on your desk, then in your files for reference.

Facts and figures about Kodapak Sheet—cellulose acetate, cellulose acetate butyrate, and cellulose triacetate. Includes full information on types, gauges, colors, finishes, and general properties—moisture, permanence, mechanical, optical, thermal, chemical, and electrical—all presented in easy-to-read form.

"Properties of Kodapak Sheet" is a helpful aid for engineers, designers, manufacturers, and converters.

Makes Good Products Better

Kodapak Sheet

"Kodapak" is a trade-mark.

A PRODUCT OF EASTMAN KODAK COMPANY, ROCHESTER 4, N. Y.

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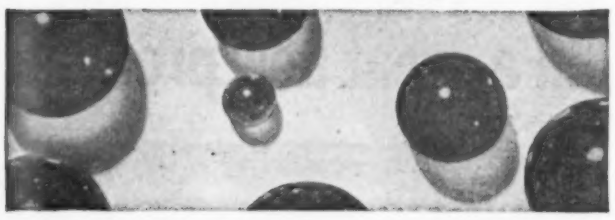
NOW—Precision Balls of Synthetic Sapphire



These balls of synthetic sapphire, polished to within 20 micro-inches of sphericity, are resistant to wear, heat, and corrosion. In many applications they need not be lubricated.

Available in 1mm, 1/16 inch, 1/8 inch, and 1/4 inch sizes, and in three surface finishes.

PROPERTIES

Coefficient of Friction	0.140
Hardness (Knoop)	1525-2000
Dielectric Constant	7.5-10
Modulus of Rigidity	21.5-27.5 x 10^6 psi
Thermal Coefficient of Expansion at 50°C (per°C x 10^6)	5.0-6.7
Chemical Resistance	Unaffected by acids, dilute alkali.

Call or write any LINDE office for information on these balls or the other forms of synthetic sapphire.

LINDE AIR PRODUCTS COMPANY
A Division of Union Carbide and Carbon Corporation
30 East 42nd St. UCC New York 17, N. Y.
In Canada: Dominion Oxygen Company, Limited, Toronto

For more details circle NED-250 C4 on enclosed inquiry slip

Mark your own symbols, numbers, lettering, on your small parts, tools, identification and name plates . . . easily, simply, quickly . . . tracing from a master with the GREEN ENGRAVER.

Widely used in electronic and plastic fields, in machine tool shops and wherever permanent marking is needed. The GREEN ENGRAVER engraves equally well on metals, plastic, wood, hard rubber and glass.

Fact-filled folder on request . . . showing how economies in costs, labor and time are achieved with the GREEN ENGRAVER.

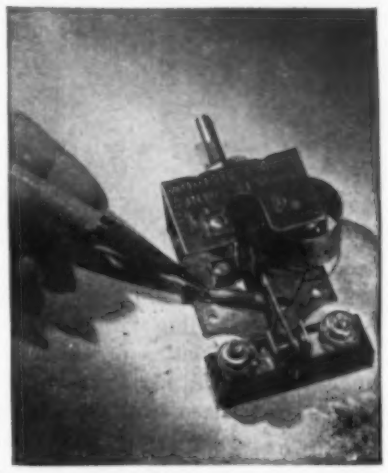
Routs Models
Profiles Engraves

Etching attachment and other special equipment for industrial uses are available.

Green Instrument Co. INCORPORATED
375 PUTNAM AVE., CAMBRIDGE, MASS.

For more details circle NED-251 C4 on enclosed inquiry slip

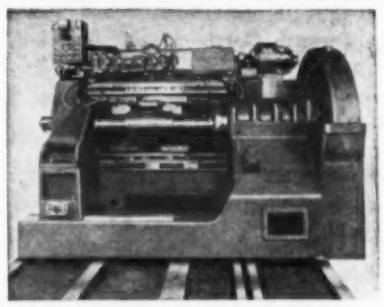
ROOM HEATER THERMOSTAT handles up to 30 amp, 125/250 v



Ability of the Room-Temp thermostat to handle currents as high as 30 amp, 125-250 v, without circuit relay or contactor, makes it practical for controlling air blast heaters, unit heaters, radiant heat panels, furnaces or air conditioners. Unit can be mounted on appliance chassis with one or more rivets or screws and has easily accessible terminals for simplified wiring. It features positive snap-action to eliminate radio-TV interference combined with extremely sensitive bi-metal temperature response at narrow differential. Single-pole single-throw or single-pole double-throw contacts are available. Made by **Westinghouse Electric Corp.**, P. O. Box 2099, Pittsburgh 30, Pa.

For more details circle NED-252 C4 on enclosed inquiry slip

GEAR GENERATOR redesigned machine provides finer precision at higher operating speed



The Farrel-Sykes gear generator has been redesigned to cut gears up to 33⅓ per cent faster, with higher accuracy and quality of tooth finish. Design changes include heat-treated main spindle and massive work saddle for rigid support of work; full hydraulic control system; electronic speed and feed indicator to enable quick adjustment of main crank speed, traverse of cutters and the feed; twin cutter heads with separate, shorter and stiffer spindles for each; and forward extension of cutters so that small diameter pinions and pinions with long shaft extensions can be readily cut.

In addition to continuous-tooth herringbone gears, machine will cut double helical gears with wide or narrow center groove, single helical and straight tooth gears. It can also produce cluster gears, angle gears, spiral gears, worms, racks (when equipped with special fixture), and variety of special contours. Made by **Farrel-Birmingham Co.**, 163 Maple St., Ansonia, Conn.

For more details circle NED-253 C4 on enclosed inquiry slip

FOR QUICK STARTS

In steam heated processes, output is increased if air is vented from the steam space.

The *rapid* removal of both large volumes of air and condensate are features of the

SARCO THERMOSTATIC STEAM TRAP

The powerful thermostatic bellows permits the use of an OVER-SIZE orifice and this orifice is WIDE OPEN when the trap is cold.

No seats to change . . . regardless of steam pressure changes. Only one operating part . . . the dependable, one-piece thermostatic bellows made of phosphor bronze, monel or stainless steel.

For removing air and condensate from dryers, kettles, pans, cookers, etc., use Sarco No. 9.
Write for Catalog 252. 505

SARCO SAVES STEAM
SARCO COMPANY, INC.
Empire State Bldg., New York 1, N.Y.
SARCO CANADA, LTD., TORONTO 5, ONTARIO

For more details circle NED-254 C4 on enclosed inquiry slip

only GRIPPER SLINGS Are Woven Wire

and here's what that means to You!

STRENGTH. Spiraled loop construction eliminates flexure of individual wires to assure longer life and less metal fatigue.

SAFETY. There's no danger of a sudden break in sling body, specially heat treated handles give extra strength at the hook.

VERSATILITY. Use any sling in basket or choke hitch. Broad, flat sling body grips load firmly, bends completely around even small radius loads when rigged in choke hitch. No kinking, tangling, snarling. Stores in compact roll or hangs against a wall when not in use.

THE CAMBRIDGE WIRE CLOTH CO.
Dept. R • Cambridge 3, Maryland

WIRE CLOTH | METAL CONVEYOR BELTS | SPECIAL METAL FABRICATIONS

OFFICES IN PRINCIPAL INDUSTRIAL AREAS

For Full Information see your mill supply, materials handling or safety equipment distributor. Or write direct for illustrated catalog.

DISTRIBUTORS—write for open territory data!

For more details circle NED-255 C4 on enclosed inquiry slip

NOW Constant Tension From Start To Finish In Winding Roll-Fed Material

Never Before Anything So Efficient · Simple · Versatile

This is your chance to obtain a higher quality of wound material than ever before—and to save substantially on operating and maintenance costs at the same time.

You've never seen anything like the Hobbs "Alquist" Winder. It's in a class by itself. No other winding device can match it for simplicity, efficiency and flexibility.

OPERATES ON A. C.

Here is a squirrel cage three-phase A. C. motor, flange mounted to a gear reducer. You connect it *directly* to your rewind shaft. It is entirely independent of the main machine drive. You plug it into your present three-phase power outlet—no transformers or converters to bother with. Then you set a knob to the desired tension and walk away.

AUTOMATICALLY SENSES TORQUE

From the start to the very finish of your rewind operation, the "Alquist" constantly and accurately maintains the desired tension—protects even the most delicate materials from stretching, breaking or contracting. Automatically the "Alquist" senses the increase in torque as the roll diameter builds up and it slows down the speed of the shaft in direct proportion. Constant tension can be maintained in a roll build-up of as high as 10 to 1.

ECONOMICAL, FLEXIBLE

Power utilization of the "Alquist" is as high as 80%, approximately four times greater than other types of winders. This means important savings in energy. Maintenance is as slight as with any normal A. C. motor—there are no brushes or tubes to contend with. The "Alquist" is compact, saves you floor space. It is clean, there are no belts to slip and stir up dirt. It is flexible—connect it directly to the rewind shaft, or remotely by chain and sprockets. And it needs no supervision, saves you labor costs.

PROVED PERFORMANCE

The "Alquist" already has been proved in winding textiles, rubber, foil, cable, wire, plastics, paper—materials of almost any type or weight. And it can be adapted to meet any production requirement.

Find out for yourself just why the Hobbs "Alquist" Winder can make such a big difference—how it can give you increased production through *positive* quality control. Mail coupon below for free information. No obligation.

HOBBS MANUFACTURING CO.
EST. 1883
41 Salisbury St., Worcester 5, Mass.

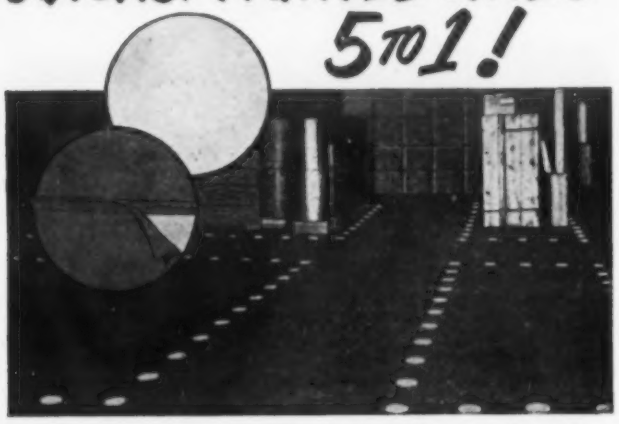
Kindly send complete information on the new Hobbs "Alquist" Winder.

Name..... *Title*.....
Company.....
Street.....
City..... *Zone*..... *State*.....

For more details circle NED-256 C4 on enclosed inquiry slip

BRADY DOTTED LINE AISLE MARKERS

OUTLAST PAINTED LINES 5 TO 1!



NEW self-sticking Brady Aisle Markers cost less to buy, apply and maintain than any other aisle marking method. Stick instantly to clean, dry floors. No moistening or machines needed. Make straight or curved lines anytime without disrupting production. No one waits while paint dries. New, special plastic construction resists abrasion, dirt, acids, oils, most solvents. Stocked in four vivid colors and sizes; specials to order. Write today for literature and usable FREE SAMPLES!

WIRE MARKERS · SPECIAL MARKERS · AISLE MARKERS · PIPE MARKERS · SAFETY SIGNS · MASKS & STENCILS · PRINTED ROLL TAPES

MANUFACTURERS OF SELF-STICKING PRODUCTS

W. H. BRADY COMPANY

763 W. Glendale Ave. • Milwaukee 12, Wisconsin

For more details circle NED-257 C4 on enclosed inquiry slip

For more details circle NED-258 C4 on enclosed inquiry slip

FREE SAMPLE

- Makes and keeps belts soft and pliable
- *Pliable* belt "clings" to "surface" of pulley
- Dissolves hard "glaze" that makes belts slip
- *Only* belt preservative that has met and passed U. S. Government Tests and Requirements
- Sold with money-back guarantee since 1896

Cling-Surface Company, Inc.
1045 Niagara Street • Buffalo, New York

Please send me FREE sample can of Cling-Surface "50" Belt Preservative

Name.....

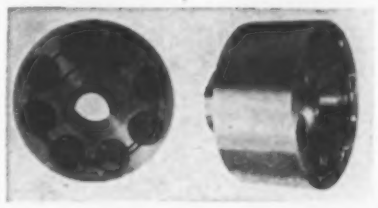
Title.....

Company.....

City.....State.....

For more details circle NED-259 C4 on enclosed inquiry slip

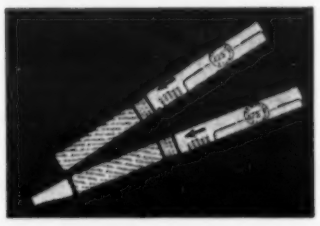
FLEXIBLE COUPLING in 1/4 to 6-in. diameter sizes



Flexible coupling makes use of easily replaceable solid neoprene cylinders and is available in shaft sizes from 1/2 to 6-in. diameter. The cylinders are inserted between two shaft hubs and are axially retained by lockwires. Design subjects them to a combination of shear and compression stresses, providing good torsional flexibility. Snubbing characteristics of this arrangement are instrumental in isolating or damping torsional vibration. The larger sizes are suitable for couplings between internal combustion engines and driven machines. Made by **Odin Corp.**, 7704 E. 82nd St., Castleton, Ind.

For more details circle NED-260 C4 on enclosed inquiry slip

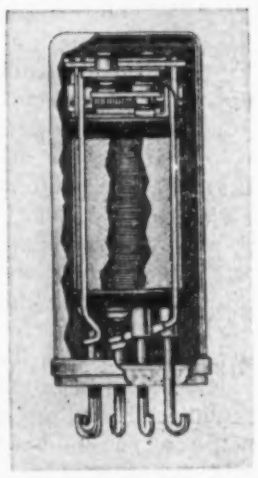
TEMPERATURE INDICATORS for 425 and 475° F



Temperature indicating crayons, known as Tempilstiks, are now available to indicate 425 and 475° F attained temperature. With this addition, they are now available covering 113 to 400° F in 12° intervals, in the range from 400 to 500° F in 25° intervals and in 50° F intervals from 600 to 2000° F. Made by **Tempil Corp.**, Dept. A, 11 W. 25th St., New York 10, N. Y.

For more details circle NED-261 C4 on enclosed inquiry slip

MINIATURE RELAY is sealed, direct current type



Hermetically sealed type PW miniature relay is direct current actuated and has balanced armature construction that withstands 10G vibration up to 500 cps during operation. Needle point pivot bearings afford friction-free movement. Dimensions are 0.765 x 1.656-in. above chassis and weight is 1 1/16-oz. Contact arrangement is 1 Form C (SPDT) and contacts are 3/32-in. diameter pure silver, rated at 2 amp 28-v dc or 115 v 60 cycles ac noninductive load. Coil ranges are from 100 to 16,000 ohms; actuation, current or voltage; operating power is 25 milliwatts to 1.5 w. Made by **Potter & Brumfield**, 270 N. Main St., Princeton, Ind.

For more details circle NED-262 C4 on enclosed inquiry slip

TO THE INGENIOUS
Not familiar with this
NEW INDUSTRIAL TOOL

Free Sample of Fullergript Brush Strip

What problems can you solve by adapting Fullergript to your equipment?

This brush strip can be coiled or twisted into numerous shapes. It can be formed to give intermittent or continuous brushing action. It adapts to stationary or power driven applications. How it may help *you* is a matter of your own ingenuity — plus the services of the Fuller Brush Engineering Dept. Find out what Fullergript can do by sending for a sample strip. We will also send a booklet showing its versatility. Simply write today.

The economy of continuous operation made possible by continuous scrubbing to remove hard baked deposits from steel conveyor in bake oven. Power driven unit applies action through two types of Fullergript brush strip.

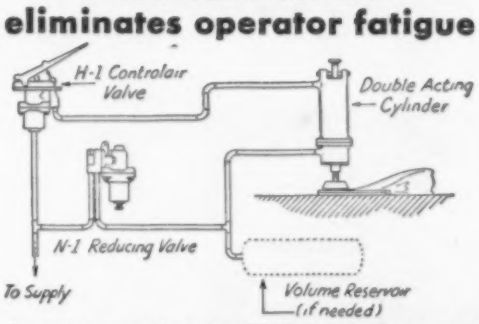
INDUSTRIAL Fuller BRUSH CO. DIVISION

3530 MAIN STREET • HARTFORD 2, CONN.

Power driven brushes, Factory & Institutional cleaning tools, Waxes & Detergents

For more details circle NED-263 C4 on enclosed inquiry slip

Pneumatic control eliminates operator fatigue



• An eastern manufacturer of ladies' pocketbooks wanted a better control system for his 15 small presses. He wanted a control that would apply light pressure to a pocketbook frame while the operator fitted material into the frame. Then, full pressure was needed to clinch the frame. A pneumatic system supplied by Westinghouse Air Brake Co. was the perfect answer.

The operator controls the pressure to the press with a Westinghouse foot-operated Controlair® Valve. He can select the exact force he needs; and both his hands are always free to work on the pocketbook. As a result, the work is less tiring for the operator; and he can work faster and more accurately. Scrap loss has been reduced.

Westinghouse pneumatic controls can give the same advantages on your machines. Write for information, or call the nearest Westinghouse Air Brake Distributor.

Westinghouse Air Brake COMPANY

INDUSTRIAL PRODUCTS DIVISION · WILMERDING, PENNA.

Factory Branch: Emeryville, Calif.
In Canada: Canadian Westinghouse Co., Ltd., Hamilton, Ontario

For more details circle NED-264 C4 on enclosed inquiry slip

Versatile pin does 4 jobs in a great new product!

SPIROL PIN — a pivot, a stop, a fastener and a reinforcement in the new DICTAPHONE Time-Master '5'

Engineers who designed Dictaphone Corporation's new dictating machine — "Time-Master 5" — found the new SPIROL pin so versatile that it could be used as a *pivot*, as a *stop*, as a *fastener*, as a *reinforcement* . . . a pin whose radial spring action would hold fast, yet could be easily removed without damage to either fastening or hole.

1. **SPIROL pins pivot** plastic control button and swinging microphone hook. SPIROL's all-around tension fits snugly in a *molded* hole in the plastic assembly, eliminating all drilling and reaming operations.
2. **SPIROL pin fastens** guide rod to frame. When compressed by insertion, pin exerts even *radial pressure* with no weak "hinge" lines — provides for easy removal and reinsertion in the field without damage to pin or hole.
3. **SPIROL pin reinforces** as well as fastens frame. Extends deep into frame, adding strength. Replaces more expensive dowel, saves a reaming operation.
4. **SPIROL 'stop'** controls movement of cam, absorbs shock better than solid pins. Available in standard sizes from 1/32" to 1/2" dia. and 1/8" to 4" length, or to specification.

Write for illustrated folder and sample SPIROL pins.

SPIROL PIN

C. E. M. COMPANY • 66 SCHOOL ST. • DANIELSON, CONN.

For more details circle NED-265 C4 on enclosed inquiry slip

Meyercord Decal Engineers and Designers Can Help You Lick that Tough Problem

If you want to ADVERTISE . . . INSTRUCT . . . or IDENTIFY on any surface from smooth, non-porous plastics to rough, pebbly materials, Meyercord engineers will come up with the answer in a hurry. We dipped into our recent orders and highlight below a few "case histories" where Meyercord Decals have been engineered for extremely difficult conditions:

AIRCRAFT INDUSTRY—Meyercord engineers developed a special identification decal for jet aircraft capable of withstanding temperatures to 900° as well as the effects of aeromatic fuels and hydraulic fluids.

ELECTRONICS INDUSTRY—A leading electronics manufacturer required a schematic diagram which could be folded compactly and placed inside communication sets. Meyercord solved the problem with a special decal applied to nylon fabric under heat and pressure.

HOME APPLIANCES—Meyercord engineers developed a new type of open-letter decal providing high color and dramatic effect—at less than one third the cost of discarded metal name plates.

MEYERCORD DECAL NAMEPLATE MANUAL and Full Information FREE

Meyercord "Mark-it" Manual shows hundreds of uses for durable, washable, decal nameplates . . . as trade marks, instructions, charts or diagrams . . . This manual is FREE . . . but request it on company letterhead, please.

THE MEYERCORD CO.
World's Largest Decalcomania Manufacturers
DEPT. R-316
5323 WEST LAKE ST.
CHICAGO 44, ILLINOIS

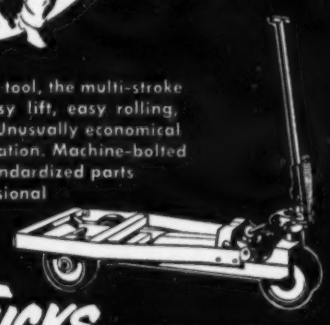
▲ For more details circle **NED-266 C4** on enclosed inquiry slip ▲

Hydromatic LIFT TRUCKS

STUEBING DESIGNED • STUEBING ENGINEERED • STUEBING BUILT

multi stroke
safety
and
economy
ease of
operation
speed

Built like a fine machine tool, the multi-stroke Hydromatic features easy lift, easy rolling, quick automatic action. Unusually economical and trouble-free in operation. Machine-bolted frame and machined standardized parts speed and simplify occasional repairs, eliminate downtime.



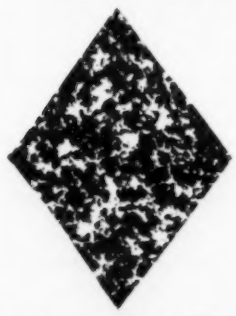
LIFT TRUCKS INCORPORATED
2423-2431 Spring Grove Avenue • Cincinnati 14, Ohio

▲ For more details circle **NED-267 C4** on enclosed inquiry slip ▲

THE MOST AMAZING FINISH DEVELOPMENT IN 100 YEARS!

COLOR-FLECKED **PLEXTONE**®
SINCE 1875 (Reg. under U. S. Pat. No. 2991004)

A textured and MULTICOLORED finish—sprayed at ONE time, from ONE gun, in ONE coat that covers surface flaws completely!



PLEXTONE Albans Granite, one of many standard pre-mixes. Also solids and custom multicolors.

A new lacquer base industrial finish, Color-flecked PLEXTONE combines the new sales appeal of *multicolor* with extreme durability and economy. It resists oil and alcohol, can be scrubbed (even scoured) because color flecks go "through-the-film." Tests show that finishing costs can be cut as much as 35%.

Samples, color chips, technical data on request

MAAS & WALDSTEIN CO.
2116 McCarter Highway, Newark 4, New Jersey
Midwest Division: 1658 Carroll Ave., Chicago 12, Ill.
Pacific Coast Div.: Smith-Davis Co., 10751 Venice Blvd., Los Angeles 34, Cal.

▲ For more details circle **NED-268 C4** on enclosed inquiry slip ▲

LONG RANGE PULSE TIMER
frequency altered by changing gears

Arrangement of cams in this long range pulse timer rotating at different speeds provide accurate momentary pulses, even when widely spaced in regard to time. Pulses will occur regularly at factory preset intervals. Their frequency can be altered, by changing gears, from one pulse every 15 seconds to one pulse per week. Made by **Hagen Mfg. Co.,** 202 Twentieth St., Moline, Ill.

▲ For more details circle **NED-269 C4** on enclosed inquiry slip ▲

HAND CLEANER DISPENSER
fool-proof, made for long service

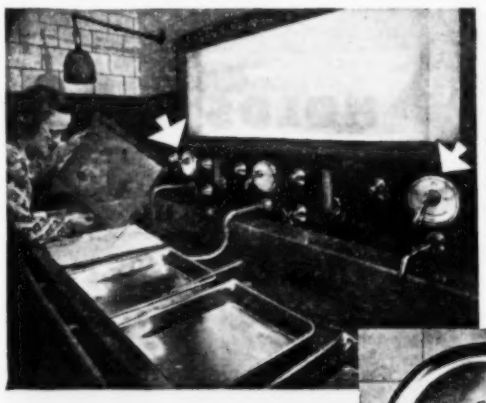
This dispenser now available to handle Quickee waterless hand cleaner is foolproof, has no gears and is made to give long service. A 5-lb can created to fit this dispenser is also available and holds enough cleaner for approximately 1000 hand cleanings. Dispensers are available at cost with shipments of hand cleaner from **Tudor Chemical Specialties, Inc.,** Dept. D, 141 Woodworth Ave., Yonkers 2, N. Y.

▲ For more details circle **NED-270 C4** on enclosed inquiry slip ▲

PLATFORM LADDER
in 4, 5, 6, 8 and 10-ft sizes

Available in 4, 5, 6, 8 and 10-ft sizes, Master platform ladder is fabricated from heavy aluminum extruded sections. Above sizes are measured to the working platform, which measures 14 x 19 in. and has a knurled nonslip surface. The guard rail is positioned in each case 2 ft above the working platform, and is recessed so that user can stand comfortably in the middle of the platform. Steps are serrated to provide good footing and all contact points have corrugated rubber feet. Made by **Louisville Ladder Co.,** Dept. NED, 1101 W. Oak St., Louisville 10, Ky.

▲ For more details circle **NED-271 C4** on enclosed inquiry slip ▲



Some of the More than 25 POWERS Thermostatic WATER MIXERS in the Milwaukee JOURNAL'S Famous Color Film Processing Laboratory

Perhaps POWERS

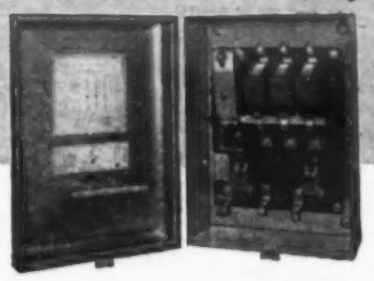
has the Right answer for your water temperature control problems. Whether you want ½° F. plus or minus control for any type of film processing, camera lens polishing or thermostatic control for jacket water cooling in a 3500 hp diesel engine or a cyclotron—contact POWERS. No other firm has such a complete line of water temperature controls. Bulletin 367 covers control for film processing. (b55)

THE POWERS REGULATOR CO., SKOKIE, ILL.
Offices in over 50 Cities, see your Phone Book • Established in 1891

▲ For more details circle **NED-272 C4** on enclosed inquiry slip ▲

QUICK-QUENCHING ALLIS-CHALMERS **New Size 4 STARTER**

Extends Contact Life



This size 4 magnetic, full voltage starter features a 150-amp, 600-volt contactor utilizing a quick-quenching arc centering blowout . . . a new principle of arc interruption which minimizes destructive burning and pitting of contacts. Contactor is clapper-type with single break contacts. Melting alloy-type relays provide overload protection. Starter available in general and special purpose enclosures.

There is an Allis-Chalmers starter for every motor need. Contact your nearby A-C representative or write for selection guide 14B7733, Allis-Chalmers, Milwaukee 1, Wisconsin. A-4047

ALLIS-CHALMERS

▲ For more details circle **NED-273 C4** on enclosed inquiry slip ▲

Overhead Heaters a Maintenance Headache?

TRY TORNADO®

Periodic cleaning of the plant heating system used to be a real problem for the Great Lakes Spring Division of Rockwell Spring & Axle Corporation. Heaters would clog with dust, preventing proper circulation.

The trouble was that blowing out 75 unit heaters hanging 14 feet above the floor caused a dust storm that required a major cleanup of machinery and equipment afterward. And the job had to be done on overtime when the rest of the plant was shut down.

That was before Tornado Vacuum went to work. Now it takes about 3½ hours to do the whole job. There's no climbing up ladders and no dust problem during or after cleaning . . . it's done during the regular work shift, too.

Tornado makes quick work of cleaning machines and other equipment—gets into corners and behind machinery where sweeping is practically impossible. The Tornado does both wet and dry pickup, so cutting oil and water are no problem. Find out how the Tornado can help your housekeeping headache,

WRITE FOR BULLETIN 600

BREUER ELECTRIC MFG. CO.
5116 North Ravenswood Avenue • Chicago 40, Illinois

▲ For more details circle **NED-274 C4** on enclosed inquiry slip ▲

XLO

Ex-Cell-O Drill Jig Bushings Have All These Features...

- Selected premium grade tool steel.
- Precision ground inside and out and under the head.
- Concentricity assured by grinding on arbors after the holes are finished.
- Hardened to 62-64 Rockwell "C."
- Uniformity of material, dimensions, finish, and hardness.
- Prompt delivery from stocks of standard sizes in Detroit, New York, Los Angeles, and London, Canada.
- Largest bushing users in the country are Ex-Cell-O customers.

Ask for Bushing Catalog No. 35936.

EX-CELL-O CORPORATION
53-17 DETROIT 32, MICHIGAN

▲ For more details circle NED-275 C4 on enclosed inquiry slip ▲

ISOMODE* PADS...

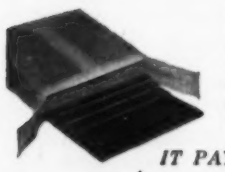
money-saving "shoes" for busy machine feet!

Now you can successfully isolate vibration, muffle plant noise, and cut down maintenance bills by using low-cost Isomode Pads.

Made of DuPont Neoprene, these pads resist oil and water, actually last for years. In thousands of installations, they have already proved their ability to swallow up troublesome machine shock and vibration. Even that of giant punch presses.

Installation is quick, easy. And there's no waste — you use only as much as you need. Simply cut an Isomode Pad to size and install under equipment. Results: Machines stay put without bolting, floors and building remain undamaged, working conditions are improved, and machine maintenance is cut.

Try a package of Isomode Pads and see. Write for full details and price list. *Trade Mark



IT PAYS TO KEEP A PACKAGE ON HAND

THE MB MANUFACTURING COMPANY, INC.
1066 State Street, New Haven 11, Conn.

▲ For more details circle NED-276 C4 on enclosed inquiry slip ▲

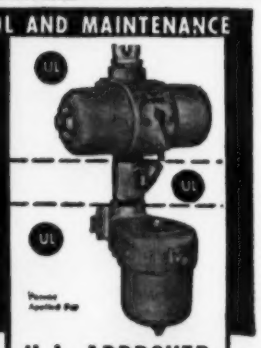
FOR *Safe* ELECTRICAL CONTROL AND MAINTENANCE

APPLETON

Explosion-proof
Dust-tight, Rain-tight

CIRCUIT BREAKER, MOTOR STARTER and COMBINATION MOTOR STARTER

UNILETS



Completely new and different! Here's superior U. L. Approved protection and far more versatile electrical control indoors and out, wherever flammable or corrosive atmospheres and tricky wiring pose seemingly insurmountable safety and maintenance problems. Check the features. Compare the advantages. It pays to install *Appleton Unilets!*

Greater Safety...Stable Production

Appleton Unilets are the *only* enclosures U. L. Approved for banked circuit breaker grouping. Properly sealed, each Appleton Unilet carries U. L. Approval for banked combination motor starter groupings in popular sizes. The individually sealed design permits safe entrance to one motor starter without disconnecting other branch circuits.

U. L. APPROVED

GREATEST *Explosion-Proof* ADVANCE IN YEARS!

- 7-thread flame-tight seal . . no bolts or flanges
- Approved for banked circuit breaker grouping
- Safe motor starter repairs without disconnecting other branch circuits
- Installed without heavy lift equipment
- Simplified "straight-thru" wiring design
- Accommodate oversize conduit and conductors
- Built-in push-button and pilot-duty control

Write Now For BULLETIN "BH"

Sold Nationally Through Electrical Wholesalers

APPLETON ELECTRIC COMPANY
1758 Wellington Ave. • Chicago 13, Ill.

with full details on U. L. Approved sizes and complete description

THE STANDARD FOR BETTER WIRING FOR OVER 50 YEARS

▲ For more details circle NED-277 C4 on enclosed inquiry slip ▲

TURBINE-TYPE BRAKE

provides exactly controlled braking effort by means of fluid pressure

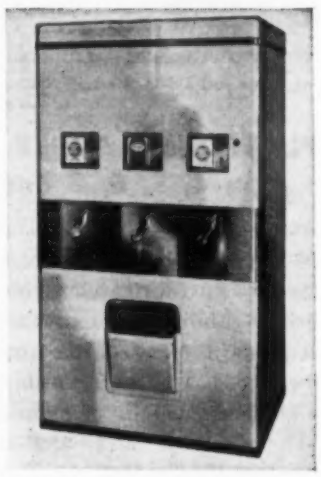
Unit-built frictionless turbine type braking system absorbs rotational energy hydrokinetically, providing exactly controllable braking effort. Fast-acting positively-operated valves vary quantity of fluid in the unit, charging the system completely for maximum braking effort or building up pressure rapidly to any required capacity. Heat generated in the fluid is dissipated in a compact water-cooled heat exchanger.

Unit operates without change in the volume of fluid in the working circuit, so that a constant braking effort can be maintained for long periods without change in braking efficiency. It is applicable to any equipment requiring a braking force applied to a rotating shaft, and has high capacity for its size. Made by **Clayton Mfg. Co.**, Dynamometer Div., Dept. N, P. O. Box 550, El Monte, Calif.

▲ For more details circle NED-278 C4 on enclosed inquiry slip ▲

MILK DISPENSER

for shops or plant cafeterias holds 120 to 156 drink containers



Three varieties of dairy drinks are served by this coin-operated Dairi-Mart milk dispenser which holds 120 to 156 drink containers, depending on make. Hydraulic mechanism is enclosed to prevent tampering or damage to cartons and is easily cleaned to comply with health department regulations. Refrigeration is sealed, and defrosting is not required. Containers can be Pure Pac, Canco or Sealking makes and of ½-pint, ⅓-qt or pint quantities. Flavors, as well as size of containers, can be changed as desired. Separate coin control for each flavor assures continued operation, even when one or two racks are sold out. Red light indicates depleted rack, and automatic sold-out mechanism returns coins. Reserve capacity is large. Unit is installed and serviced by local milk companies or vending machine operators. It is marketed by **Cedar Hill Farms, Inc.**, Dept. N, Cincinnati 27, O.

▲ For more details circle NED-279 C4 on enclosed inquiry slip ▲

HUNT UP HUNTER ... make hard jobs easy!

Magic-Tip
HOLDS SCREW

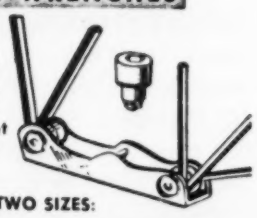
resists up to 30 lbs. pull pressure!

No more dropping and groping when driving screws in hard-to-get-at places. Internal pin locks screw firmly to blade tip. No bulky claws to get in the way in tight spots. Hardened steel locking pin, tough chrome moly blade, unbreakable plastic handle. 12 models to choose from. Satisfaction or refund.

Model C (standard) $1.98 Postpaid

AVOID SCATTERING and LOSING SOCKET WRENCHES

Smitty DRIVER for Allen Heads



A pocket-size set of socket head wrenches in jack-knife type handle—the right size is always handy. You get greater leverage at any angle. Handle will not break or bend . . . special heat-treated keys.

TWO SIZES:
Smitty—3/32" to 7/32" inclusive $1.50 postpaid
Smitty Jr.—.050 to 5/32" inclusive $1.44 postpaid

Satisfaction or refund

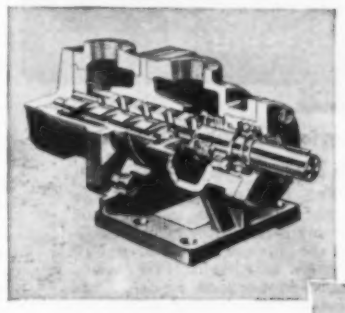
at your Hardware Dealer or

HUNTER TOOLS Write for FREE CATALOG
Box 564-N • Whittier, California

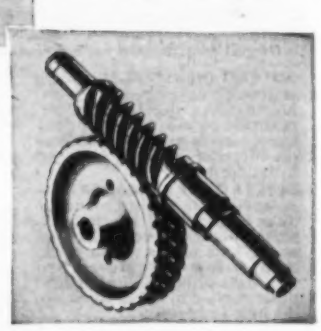
▲ For more details circle NED-280 C4 on enclosed inquiry slip ▲

DE LAVAL

manufactures wide range line of IMO Pumps and Worm Gearing



Unique De Laval IMO Pumps are quiet, pulsation-free, compact and designed for direct-connecting high speed operation. Send for Bulletin LG-B showing wide range IMO line.



De Laval Worm Gear Sets are available in 3:1 to 100:1 ratios, fractional .1 to 550 horsepower and 3" to 36" center distances. Send for comprehensive Catalog 5000.

DE LAVAL STEAM TURBINE COMPANY
808 Nottingham Way, Trenton 2, New Jersey

DL281A
▲ For more details circle NED-281 C4 on enclosed inquiry slip ▲

Low-cost key to fast model changes

PLASTIC JIGS, TOOLS, AND METAL-FORMING DIES

Reduction of tooling costs is a basic goal for the automotive and aircraft industries in 1954. A significant contribution to this program will come from the application of BAKELITE Epoxy Resins for metal-forming dies and fixtures.

These resins can be cast into dies without applied heat or pressure, using molds of glass, plaster, wood, or metal. Adding a special hardener converts the resin syrup into a thermosetting solid in a few hours at room temperature. Shrinkage is negligible. Minute mold details are accurately reproduced. The resulting tools are light in weight, with great impact, flexural, and compressive strengths, and excellent dimensional stability. They can be machined or patched when changes are needed.

Laminations of glass fabric and BAKELITE Epoxy Resin are readily constructed for high strength, thin-walled fixtures such as spotting die racks, checking fixtures and Keller models. These devices are accurate and tough, will not check or crack, need no edge binding.

Bakelite Company manufactures epoxy resins and their hardeners. Because of the variety of requirements and formulations, address your problems to us for proper recommendations. Write Dept. TR-53.

Illustrations by courtesy of Ren-ite Plastics, Inc., Lansing, Michigan.

BAKELITE
TRADE-MARK
EPOXY RESINS

TRADE MARK
BAKELITE COMPANY
A Division of Union Carbide and Carbon Corporation
UCC
30 East 42nd Street, New York 17, N. Y.
In Canada: Bakelite Company
A Division of Union Carbide Canada Limited, Belleville, Ontario

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WHY RISK

use UNBREAKABLE
PLAXPAK®
Polyethylene BOTTLES

LIGHTWEIGHT
CHEMICALLY INERT
SMOOTH POURING

They will improve plant safety . . . simplify handling of bulk fluids . . . protect purity of liquids put in them. For details, write for "Plaxpak Utility Bottles" brochure or ask to see your nearest Plax distributor.

PLAX CORPORATION
DEPT. D, WEST HARTFORD, CONNECTICUT
IN CANADA: Plax Canada, Ltd., Montreal & Toronto

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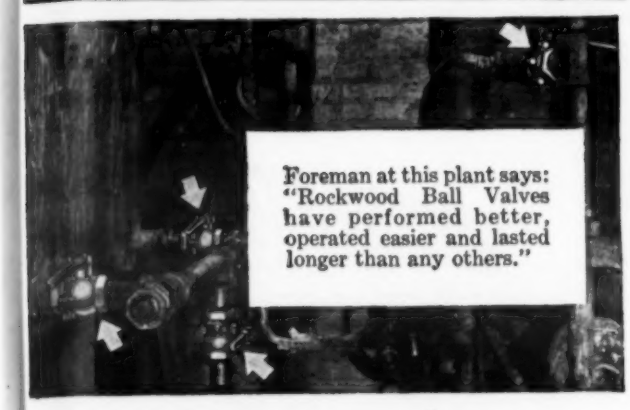


Do you need a
FULL-FLOW VALVE?

FULL-ROUND-FLOW in ceramics plants, where Rockwood Ball Valves, handling clay-and-water mixtures, protect product quality by preventing air bubbles caused by turbulence in conventional valves. What are *your* applications?

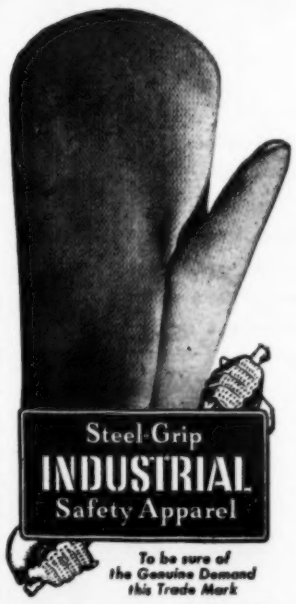
Other features — positive leakproof seating; quick opening and closing and extra wear-resistance. Tested and listed by Underwriters' Laboratories, Inc. Write for complete details. Rockwood Sprinkler Company, 44 Harlow Street, Worcester 5, Mass. Distributors in all principal cities

ROCKWOOD FULL-FLOW BALL VALVES
THE FLOW IS AS ROUND AS THE PIPE ITSELF

▲ For more details circle NED-284 C4 on enclosed inquiry slip ▲

"WOVEN-Gards"

BETTER HAND PROTECTION
at amazing low cost



"Woven-Gards" are hand protectors, mitts, pads, sleeves and aprons made of a long wearing woven cotton safety material. Provide flexibility, comfort, resistance to abrasion and cutting. Highly oil absorbent. Excellent for handling oily, slippery sheets. Porous weave makes them the finest protector for handling lower temperature jobs. Excellent protection at lowest cost. We manufacture a complete line of industrial safety apparel. Write for free catalog with price list.

INDUSTRIAL GLOVES COMPANY, 1521 Garfield Street, Danville, Illinois
A Corporation
(In Canada: Safety Supply Co., Toronto)

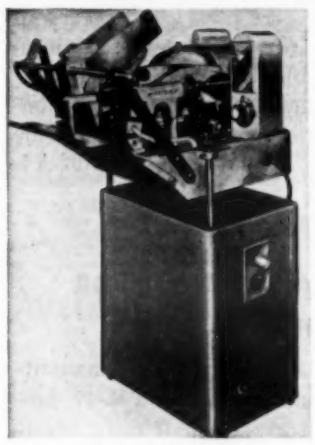
▲ For more details circle NED-285 C4 on enclosed inquiry slip ▲

MINIATURE POTENTIOMETER
furnished with servo type mounting

Close electrical tolerances on total resistance, electrical rotation angle and linearity are maintained by type RV P7/8, shown at top, miniature precision poteniometer. This ⅞-in. diameter unit is furnished with servo type mounting for motor or gear-driven applications where precise mechanical mounting dimensions are required. These may be ganged using stainless steel clamp rings which allow precise phasing among ganged sections by the user. Set voltage will remain essentially constant with changes in ambient temperatures or severe environmental conditions. Model RV7/8, bottom, is provided with threaded bushing and shaft locking device. Made by **Technology Instrument Corp.**, 531 Main St., Acton, Mass.

▲ For more details circle NED-286 C4 on enclosed inquiry slip ▲

HEAT SEALING-LABELING MACHINE
folds and seals both bag and label at same time



Improved Vacumatic heat sealing and labeling machine for Cellophane, polyethylene and Pliofilm bags will automatically take label up to 11 in. wide, drop it over top of bag, then fold and seal both bag and label at same time. First of four newly introduced devices is one that times release of label to correspond with speed of operator. Second controls label pick-up and eliminates possibility of two labels being put on same bag. Third improvement is an adjustable feeding device that drops label in exact position, permitting control of slightly curled labels. Fourth device is control that automatically prevents sealing jaws from closing more than once in any sealing cycle.

Machine is adjustable for folding label in any practical manner, such as in half or with one side longer than other. It can be adapted to automatic conveyor operation by addition of special feeding table and employs full-scale vacuum pump, built into self-contained base. Made by **Mercury Heat Sealing Equipment Co.**, Dept. 3, 331 N. Eleventh St., Philadelphia 7, Pa.

▲ For more details circle NED-287 C4 on enclosed inquiry slip ▲

"MX" ABRASIVE PRODUCTS...Versatile, fast-cutting, self-cleaning, safe, long-lasting

Source: THE CARBORUNDUM COMPANY
Niagara Falls, New York

"MX" abrasive products by CARBORUNDUM do such varied jobs as reducing and blending stainless steel welds in one operation... cleaning out dainty designs on sterling silver...cutting through one inch black pipe in seconds.

Fast-cutting, they finish as they cut. The special "MX" bond provides "cushion action"—reducing vibration and giving a smooth, uniform finish.

Self-cleaning. "MX" abrasive products cut clean ...resist loading even on soft metals, such as aluminum, or on plastics, glass and other non-metallics.

Safe—they resist impact and heat shock. They operate efficiently, safely—on portable or stationary equipment.

Long-lasting—"MX" abrasive products remain usable right down to the arbor, shank or nut.

"MX" abrasive products come in seven useful forms: straight wheels, mounted wheels, sticks, depressed center wheels, discs, general purpose cut-off wheels, and production cut-off wheels.

Get full information from your CARBORUNDUM distributor today. Or send for your free copy of "MX Products" by circling the inquiry number—or write to us, addressing Dept. NED 81-310.

"Carborundum" and "MX" are registered trademarks which indicate manufacture by The Carborundum Company, Niagara Falls, N. Y.

81-310

▲ For more details circle NED-288 C4 on enclosed inquiry slip ▲

PETERS-DALTON Inc.
saves engineering, fabricating, and installation costs using PLATECOILS
REPLACES PIPE-COIL

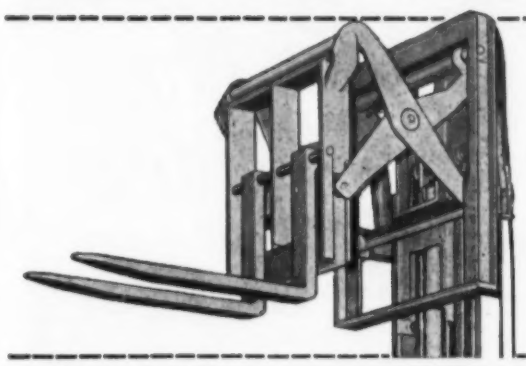
Peters-Dalton, Inc., Detroit, Michigan, has found it is less costly to buy Platecoils than to fabricate their own pipe coils. Platecoils are installed in a fraction of the time without the complicated racks needed for pipe coils. They have also simplified engineering and estimating. Considerable time is saved by the standard charts of sizes and capacities.

Send for complete technical manual and descriptive Bulletin No. P57.

PLATECOIL
Division
Tranter Mfg. inc.
LANSING 4, MICHIGAN

▲ For more details circle NED-289 C4 on enclosed inquiry slip ▲

6 FT. AISLES Now you can have them...



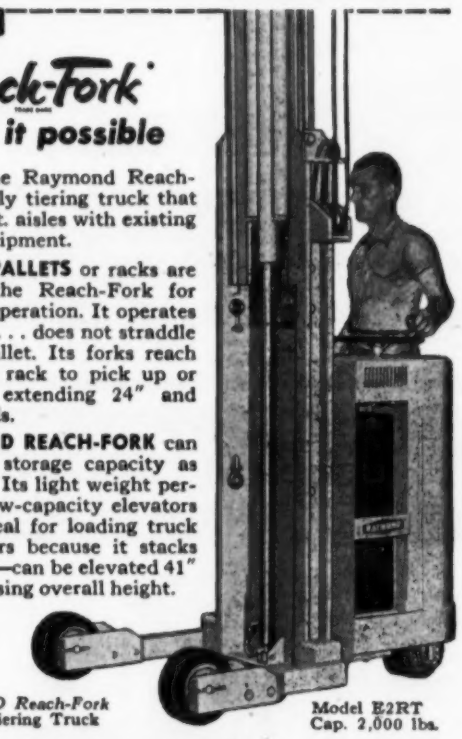
without obsoleting your present racks or pallets

RAYMOND
Reach-Fork
makes it possible

IT'S TRUE! The Raymond Reach-Fork is the only tiering truck that operates in 6-ft. aisles with existing warehouse equipment.

NO SPECIAL PALLETS or racks are required by the Reach-Fork for close-quarter operation. It operates from the aisle . . . does not straddle the bottom pallet. Its forks reach right into the rack to pick up or deposit load, extending 24" and back in seconds.

THE RAYMOND REACH-FORK can increase your storage capacity as much as 50%. Its light weight permits use on low-capacity elevators and floors. Ideal for loading truck trailers, boxcars because it stacks pallets closely—can be elevated 41" without increasing overall height.



RAYMOND Reach-Fork
Electric Tiering Truck

Model E2RT
Cap. 2,000 lbs.

Reach-Fork is equipped with new Raymond power unit that opens like a book for fast, easy servicing. All parts housed behind hinged double doors . . . nothing under unit to inspect but the wheels.

* PATENT NO. 2,564,002

RAYMOND

ELECTRIC INDUSTRIAL TRUCKS HYDRAULIC ELEVATING EQUIPMENT

MAIL COUPON TODAY

The RAYMOND CORPORATION
4131 Madison St., Greene, N.Y.

( ) Please send me latest Reach-Fork Bulletin.
( ) Please have your representative call.

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

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Kleenslot THE IDEAL SCREEN FOR DEWATERING AND SIZING!

Cross section at left shows how KLEENSLOT Screens operate on a non-clogging principle.

IT CAN BE ADAPTED TO FIT ANY MAKE OF VIBRATOR. It is not necessary to change your present machine to accommodate our screen.

KLEENSLOT WEDGE WIRE VIBRATOR SCREENS are of quality construction and built to give maximum long-life service. The rigid construction and method of installation prevents "whipping".

The wedge shape of the screen wire with its non-clogging, non-blinding features permits perfect separation on wet or dry screening and the rigid construction adds considerable to its capacity and efficiency when used in vibrator applications.

SEND FOR OUR ILLUSTRATED CATALOG

Wedge-Wire CORPORATION
GAS ST. AT NICKEL PLATE R.R., WELLINGTON, OHIO

For more details circle NED-291 C4 on enclosed inquiry slip

FREE TRIAL SHOWS HOW!

SHAKEPROOF T. M. REG. U. S. PAT. OFF. "SPEED-NUTS*"

SAVE TIME . . . REDUCE COSTS!

Designed to clip quickly and easily in place, SHAKEPROOF "SPEED NUTS" eliminate costly riveting, staking or welding operations. Light weight and easy handling speeds assembly.

SEND FOR FREE TEST KIT NOW!

*T. M. REG. U. S. PAT. OFF. BY TINNERMAN PRODUCTS, INC.

SHAKEPROOF "Fastening Headquarters"®
DIVISION OF ILLINOIS TOOL WORKS
St. Charles Road, Elgin, Illinois
Offices in principal cities

For more details circle NED-292 C4 on enclosed inquiry slip

LEVIN® MICRO-DRILL PRESS
FOR VERY SMALL HOLES DOWN TO .002"

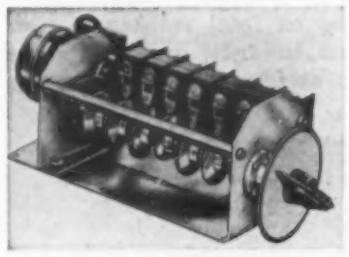
Designed to hold small drills in precision collets, thus overcoming the difficulty of making a drill run true as when held in a conventional drill chuck. Absence of a sliding quill guarantees maximum sensitivity with fingertip control. A mounted 1/8" capacity chuck can also be used.

Send for Catalog L describing Micro-Drill Press, full range of collet sizes, accessories and other precision tools

LOUIS LEVIN & SON, INC., 3610 South Broadway, Los Angeles 7, Calif.

For more details circle NED-293 C4 on enclosed inquiry slip

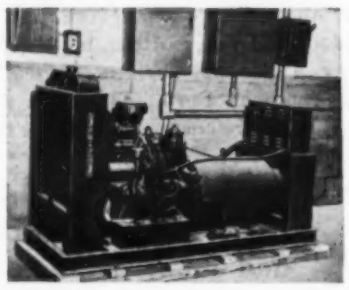
MULTICIRCUIT TIMERS with as many circuits as desired



Suitable for use in liquid dispensing and similar time-operated machines, multiple circuit timers can be set for on and off periods with as many circuits as desired. They are adapted to coin machines which operate at a preset time interval. Contact rating is 15 amp, 1000 w at 115 v ac. Made by **Zenith Electric Co.**, Dept. C-6, 152 W. Walton St., Chicago 10, Ill.

For more details circle NED-294 C4 on enclosed inquiry slip

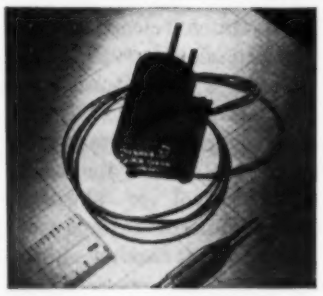
ELECTRIC GENERATOR PLANTS have 20, 30 and 50-kw ratings



Packaged Ready-Power electric plants are available in 20, 30 and 50-kw ratings and are mounted on a welded structural steel base which does not require a special foundation. They are powered by Chrysler industrial engines which give economical, quiet and smooth operation. Engine features include sodium-cooled exhaust valves, air-cooled generator and downdraft carburetion. Both engine and generator controls are mounted in a single control cabinet. Made by **Ready-Power Co.**, 11231 Freud Ave., Detroit 14, Mich.

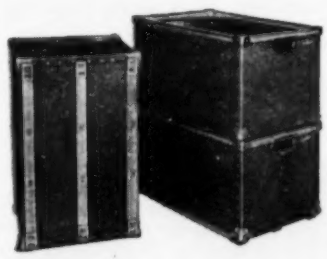
For more details circle NED-295 C4 on enclosed inquiry slip

TINY PERMANENT-MAGNET MOTOR rated 1/400-hp at 10,500 rpm



Miniature permanent-magnet type PM-47 motor for small fans, blowers and similar light-load applications, is rated at 1/400-hp with operating rotor speed of 10,500 rpm. Designed for continuous duty, motor draws 0.18 amp at 27 v dc. Dimensions are 1 13/16 in. by 1⅛-in. diameter and weight is 5 oz. The ⅛-in. diameter shaft has extension length of 1 1/16 in. Other lengths and special arrangements including splines, keyways, gears, etc., can be provided. Electrical connections can be furnished in number of arrangements to suit application. Integral-lead type is illustrated. Made by **Dalmotor Co.**, 1354 Clay St., Santa Clara, Calif.

For more details circle NED-296 C4 on enclosed inquiry slip



Tough Babies!

THEY DEFY ROUGH HANDLING!

LOWER COST Material Handling favors these rugged items! Mill-box above features steel compound Top rail (see inset) and Bulge corners, both extraordinary wear-resisting. Note slat reinforcing and non-jamming "nesting limits"

BOTH BUILT BY "BAL" BUILT WITH A CONSCIENCE FOR MATERIAL HANDLING

Nesting tote boxes at right, also built with handles and strongly reinforced all-fibre; hard, vulcanized for severe usage.

ALSO HARD VULCANIZED FIBRE TRUCKS, DRUMS, SPECIAL CASES.

• Write for Catalog!

WILLIAM BAL CORPORATION
11 Johnson St, Newark 5, N. J.

For more details circle NED-297 C4 on enclosed inquiry slip

BREEZE Job-Engineered BELLOWS

ANOTHER BREEZE MARK PRODUCT

...Give LASTING PROTECTION Where Ordinary Bellows Fail

Breeze welded diaphragm bellows meet the operating life cycle of any equipment in which they are used *because every Breeze bellows design is individually engineered and built for the job.*

Breeze has no "stock bellows," but if you have a vibration problem in ducts, large or small, or want permanently sealed valve enclosures in any type of piping system, or need bellows for torque transmission or other uses, Breeze experience can quickly provide the answer . . . and production can meet your requirements.

A Breeze bellows is dependable because each diaphragm is designed to work well within its elastic limit. This is accomplished by thorough analysis of each application and careful design of the bellows to withstand all requirements. "Job engineering" each individual type eliminates makeshifts, assures efficient performance.

Breeze bellows are made in stainless steel, inconel, monel, nickel, steel, or other weldable alloys.

Feel free to consult us without obligation on your existing bellows requirements, or any other project where reliable welded diaphragm type bellows might solve a design problem.

BREEZE CORPORATIONS, INC.
41-S. Sixth St., Newark 17, N. J.

OTHER BREEZE PRODUCTS: ACTUATORS • RADIO SHIELDING • AERO-SEAL HOSE CLAMPS

For more details circle NED-298 C4 on enclosed inquiry slip

cochrane

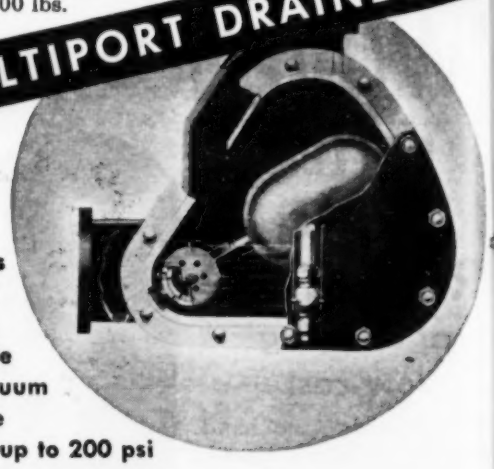
ALL SERVICE SEPARATORS

. . . for removal of liquid entrainment (water, oil, etc.) from vapors-gases

Clean, dry vapor-gas (steam, compressed air) is assured at point of use since liquid entrainment is effectively separated by a scientifically designed, impingement type baffle and immediately moved to the separator drain. Separated liquid cannot be wiped or carried over or under baffle to the outlet path. Pressure loss is practically nil since areaways through separator are much greater than cross-sectional area of inlet.

In all sizes ½" to 12" for working pressures up to 600 lbs.

MULTIPORT DRAINERS



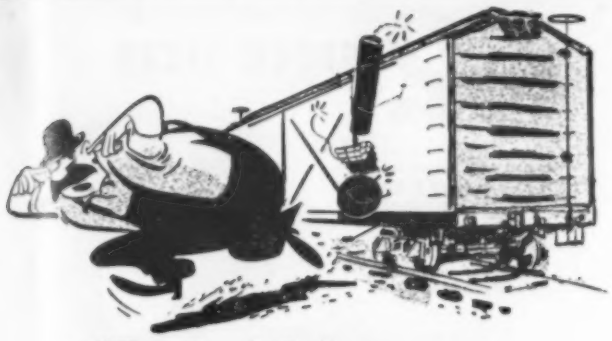
. . . for continuous discharge of vapor condensate under vacuum or positive pressures up to 200 psi

Instantaneous response • Tremendous discharge capacity due to large port areas • Only one moving element • Self-regulating, self-cleaning cylindrical valve never leaves seat • Position handle outside body permits manual closing or opening wide to serve as an effective blow-off • Several types in many capacities available.

Write today for full details.

cochrane corporation
3143 N. 17th Street, Philadelphia 32, Pa.
Representatives in principal cities of U.S.A.

For more details circle NED-299 C4 on enclosed inquiry slip



"Fort' of Julee come early this year!"

Why use high-explosive methods to open balky, hard-to-roll boxcar doors? Why endanger lives and limbs? Why waste labor, time and money? THE NOLAN ONE-MAN CAR DOOR OPENER OPENS ANY BOXCAR DOOR IN 20 SECONDS OR LESS!

A few quick pulls on the anchor chain by one man and the door rolls open. The NOLAN saves its low initial cost in the first hour of operation.

NOLAN ONE-MAN CAR DOOR OPENER **$37.50**

Order one or more now! FREE LITERATURE — F.O.B. Bowerston

THE NOLAN COMPANY

128 Pennsylvania Street, Bowerston, Ohio

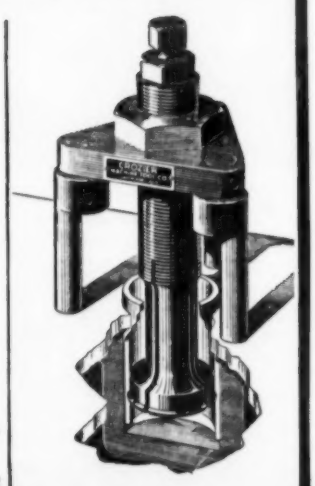
▲ For more details circle **NED-300 C4** on enclosed inquiry slip ▲

NEW EXTRACTOR

removes bushings from blind holes ...cuts time 75 per cent

The entirely new method of extracting bushings, bearings, sleeves, liners, etc. Eliminates necessity for machining, minimizes the hazard of injury to casings or excessive dismantling of equipment, handles holes from ½ to 2"—over 5 tons have been extracted with unit. Eliminates as much as 75 per cent of labor and time, slashes inventory.

For complete information write Department NED-3



CROZIER Machine Tool Co.

684 NO. PRAIRIE AVENUE, HAWTHORNE, CALIFORNIA

▲ For more details circle **NED-301 C4** on enclosed inquiry slip ▲

The Simplest Way to

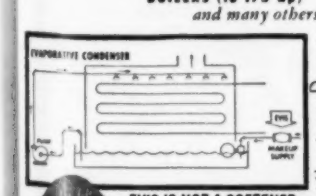
SOLVE SCALE PROBLEMS

Proven Uses Include
ALL PIPING SYSTEMS
CONDENSERS (most types)
COOLING TOWERS
ENGINES & COMPRESSORS
CUBE & FLAKE ICE MAKERS
BOILERS (to 175 wp)
and many others

EVIS Water Conditioners are helping industry conquer its costly scale problems. Plant equipment is made to operate at higher efficiency. Maintenance costs are profitably lowered and shut-downs for periodic clean-ups are often entirely eliminated. The EVIS units are Specially Processed to impart a continuous catalytic action on water-solids flowing through it. This action alters physical behavior sufficiently to inhibit most scale formations. Many thousands of EVIS Water Conditioners are now in service.

Write for further information or ask your Plumbing Supply, Air-Conditioning-Refrigeration or Industrial Equipment Jobber.

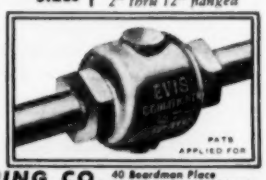
SIZES | ⅜" thru 2" screwed; 2" thru 12" flanged



EVIS IS NOT A SOFTENER

Flow Line Type Available for Deep Well Pumps

SOLD ON 90-DAY MONEY-BACK GUARANTEE



EVIS MANUFACTURING CO. 40 Boardman Place, San Francisco 3, California

FRANCHISED REGIONAL DISTRIBUTORS

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RENO WATER CONDITIONED SALES CORP. Western Amer. Life Bldg., 2-5819
SEATTLE EVIS-NORTHWEST 2417 E. Marginal Way, EL-6116
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DALLAS EVIS-SOUTHWEST CO. 6037 Chevy Chase, EM-0147
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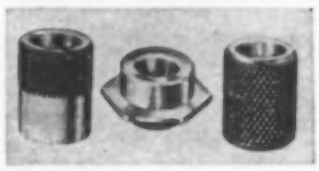
EXCLUSIVE MARINE DIST. MORAN-EVIS CO., SAN FRANCISCO 420 Market St., DO 2-4565

▲ For more details circle **NED-302 C4** on enclosed inquiry slip ▲

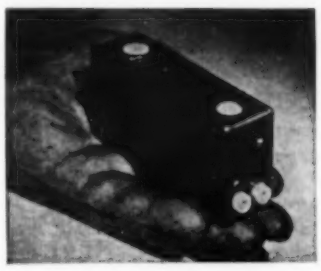
DRILL JIG BUSHINGS for plastics or other "soft" tooling



Available in three types, drill jig bushings are designed for use in fiber glass, wood, Masonite, plastics and soft metal tooling. Longitudinal serrations of the Serragrip bushings permit them to be pressed into such materials without tearing or shearing effect and prevent slipping or rotation in use. Deltagrip and Hexagrip, the other two types, are designed for casting into Cerromatrix or plastic tooling and have similar characteristics in use. Made by **American Drill Bushing Co.**, Dept. S-1, 5107 Pacific Blvd., Los Angeles 57, Calif.

▲ For more details circle **NED-303 C4** on enclosed inquiry slip ▲

GEIGER COUNTER self-contained, weighs 11 oz



Hardly larger than package of king-size cigarets, accurate and sensitive geiger counter for detecting radioactivity is self-contained and provides continuous or intermittent service. Used in conjunction with earphones, it is designed as a civil defense aid for the plant or office. Instrument is made of heavy gage steel with blue hammertone finish and weighs only 11 oz. Price is $19.95. Made by **Microchemical Specialties Co.**, Cam-Mac Div., 1834 University Ave., Berkeley 7, Calif.

▲ For more details circle **NED-304 C4** on enclosed inquiry slip ▲

WELDING HELMET LENSES correct vision for close work

Magnifying lenses for use in welding helmets are available for correcting or improving the vision of welders. Called See-Weld lenses, they are plastic plates in which have been inserted ground and polished optical lenses of different focal or magnifying powers. These are inserted in welding helmets or hand shields to provide correct vision. Lenses obviate need for corrective spectacles, especially the bi-focal type, during welding, but they can be worn if necessary. They are available with focal powers from 0.75 to 2.50 and special powers can be made to order. Made by **Buell W. Nutt Co.**, Dept. 20, 12016 W. Pico Blvd., Los Angeles 64, Calif.

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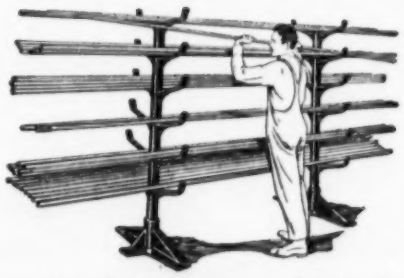
for EFFICIENT HANDLING and ORDERLY STORAGE



You save time, both in storing and in issuing, when you use Brown Sectional Racks. Open sides speed handling. Complete visibility permits quick selection to save waiting mechanics time.

Maximum flexibility in arrangement is possible because each Brown Rack is independent and self-contained, need not be bolted to floor. Easily relocated. Systemized storage with Brown Racks promotes good housekeeping, cleanliness.

All iron and steel construction, can't burn, bend, sag or warp. Never wear out.

Get these values now! Write for complete specifications and prices on wide range of models and sizes. Brown Engineering Co. 129 N. Third St., Reading, Pa.

BROWN QUICK-SERVE RACKS

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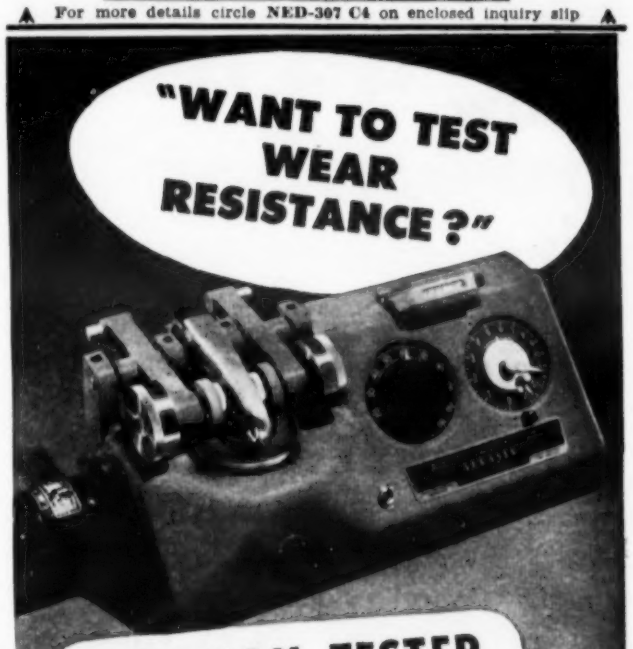
Control Costs! Print the Weight with New TOLEDOS

New Toledo Printweigh Scales meet your needs today for *closer cost control!* Stop human errors in reading, remembering, recording . . . provide accurately printed weights with split-second speed . . . *accurately* recorded!

Printweighs are available for dial type scales in the great new line of Industrial Toledos! *44 new features* include . . . new clean-line design . . . double-pendulum mechanism in one-piece sector . . . lifetime fulcrum. Send for new condensed catalog No. 2001. Toledo Scale Co., Toledo 1, Ohio.

TOLEDO.
Headquarters for Scales

▲ For more details circle **NED-307 C4** on enclosed inquiry slip ▲



ABRASION TESTER

- SIMULATES ACTUAL WEAR CONDITIONS
- FOR PLASTICS, RUBBER, TEXTILES, PAINTS, LINOLEUM
- GIVES ACCURATE NUMERICAL REPORT

The Model 140 Taber Abraser is recognized the world over as the STANDARD for testing the wear resistance of plastics, rubber, textiles, linoleum, paint and other protective coatings. Anyone can make a scientific, wet or dry, comparative abrasion resistance test by merely inserting sample in instrument and taking numerical reading from dial. Send coupon below for descriptive literature.

SHEAR HARDNESS and DIAMOND SCRATCH TESTER

Tests quality of plastic material and plastic coated surfaces to resist scratches, digs, scrapes and other physical damage not classed as normal wear. Handles specimens from thin plate to 1/4" thickness. Used everywhere for precision perfect tests.

STIFFNESS TESTER

Determines both INITIAL and NORMAL stiffness of sheet and wire specimens in *eight* test ranges and gives report from DIRECT READING. Precision shear cuts exact specimens from paper or plastic (up to 20 pt.) to eliminate possible variation in results.

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Taber **INSTRUMENT CORPORATION** SECTION 16
111 Goundry St., North Tonawanda, N. Y.

☐ Please send me booklet on Taber Abraser
☐ Please send me booklet on Taber Hardness and Scratch Tester
☐ Please send me booklet on Taber Stiffness Tester

NAME .....
COMPANY .....
ADDRESS .....
CITY ..... ZONE ..... STATE .....

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SAVE 85% Of Needless Washroom Expense

NEW, FASTER DRYING *Sani-Dri*
Provides CLEAN, SANITARY SERVICE

SAVES TOWEL COSTS . . . SAVES MAINTENANCE

Save up to 85% of washroom costs with new, faster drying Sani-Dri hand and hair dryers. No buying and storing of paper towels . . . no monthly service fee for cloth towels. Sani-Dri reduces maintenance overhead and provides 24-hour, automatic drying with no clutter . . . no towel waste . . . no fire hazard. All models carry Underwriters seal and 2 year guarantee.

Only Sani-Dri—The Original Electric Dryer Offers So Many Exclusive Features!

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"Dependable Since 1897"
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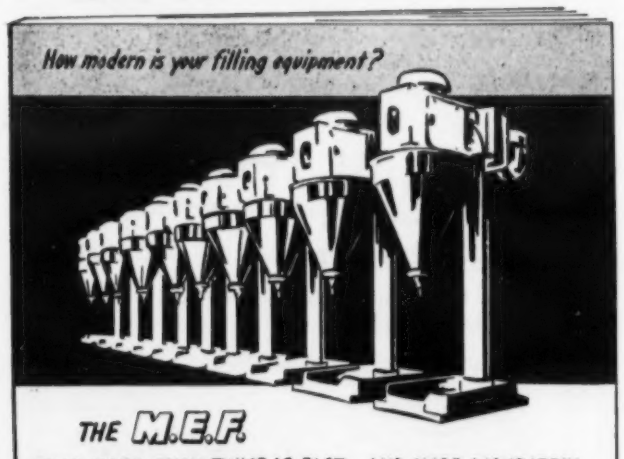
For more details circle NED-309 C4 on enclosed inquiry slip

how modern is YOUR filling equipment?



WHY NOT FIND OUT?

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Here's valuable reading for packaging and production executives interested in cutting filling costs and speeding up production. Shows typical applications handling liquids, pastes, abrasives, both free and non-free flowing powders, melted materials up to 500° F., and many others including aseptic and explosive. Pictures manual, semi-automatic, and automatic equipment with filling speeds *up to 240 a minute with 99.7% mechanical accuracy!* Yours for the asking — mail coupon today. No salesman will call.

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Please send me the brochure "HOW MODERN IS YOUR FILLING EQUIPMENT?"

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COMPANY_____
ADDRESS_____

For more details circle NED-310 C4 on enclosed inquiry slip

INFRARED HEATING PANEL
66 x 12-in. unit designed to operate at 700° F on work

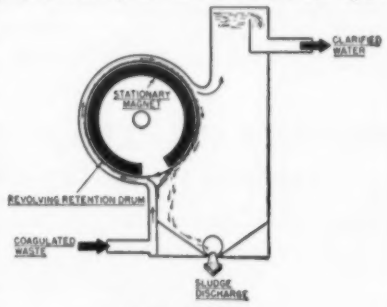
Large feeding webs used in paper, plastics and textile industries are easily spanned by this Chromalox infrared electric radiant heating panel which measures 66 x 12 in. Standard models are rated 2.7 kw per sq ft and distribute quickly absorbed far-infrared radiation with extreme uniformity over extended areas, even at closest work spacings. Output can be easily controlled from 4 to 100 per cent of 15 kw capacity, with element temperature up to 1450° F.

Standard voltages are 240 and 480 v, while special panels of other watt ratings and voltages up to 600 v can be made to order. Built in and attached to integral steel frame are all essential oven components, including alloy-sheathed elements; reflector; interconnecting 100-amp, three-phase bus; and electrical and thermal insulation. Panel is designed to operate at 700° F on work. Made by **Edwin L. Wiegand Co.,** 7509 Thomas Blvd., Pittsburgh 8, Pa.

For more details circle NED-311 C4 on enclosed inquiry slip

MAGNETIC CLARIFICATION SYSTEM
for paper and board mill effluent clarifies up to 720,000 gal/day

Continuous removal of suspended matters and colloidal dirt from waste effluent in all types of paper and board mills is provided by this clarification system. Use of magnetic clarifiers in system cuts down settling time to 3 to 10 seconds for possible operating speed of up to 720,000 gal per day. In roofing mill installations, clarified water can be reused or can be dumped without fear of stream pollution.



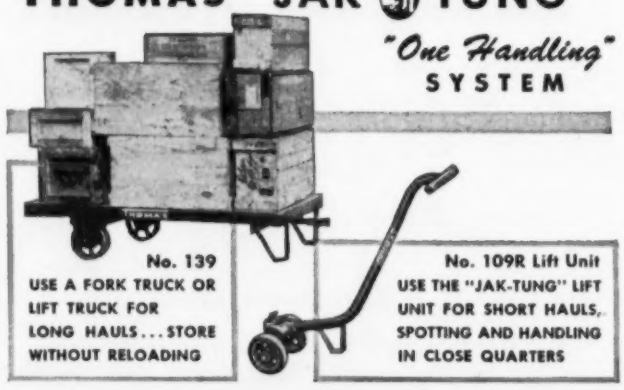
MAGNETIC CLARIFIER SCHEMATIC DIAGRAM

Contaminated water is first pumped to small mixing tank where iron oxide, ferrous sulphate and lime slurry are mixed into it. Water then goes to detention tank where it is agitated to form large tough flocs. Effluent is then piped to group of magnetic clarifiers, number of which depends on type of waste treated. Undesirable solids and fibers now clinging to iron oxide particles are picked up by revolving magnetic drum, then doctored off and accumulated. Clarified effluent will have 30 to 40 per cent BOD reduction. Developed by **Black-Clawson Co.,** Clark St., Hamilton, O.

For more details circle NED-312 C4 on enclosed inquiry slip

FOR HAND OR POWER OPERATION

THOMAS JAK TUNG
"One Handling" SYSTEM



No. 139
USE A FORK TRUCK OR LIFT TRUCK FOR LONG HAULS . . . STORE WITHOUT RELOADING

No. 109R Lift Unit
USE THE "JAK-TUNG" LIFT UNIT FOR SHORT HAULS, SPOTTING AND HANDLING IN CLOSE QUARTERS

Move and store your loads without rehandling. Save time and manpower . . . storage and handling space with a THOMAS "JAK-TUNG" SYSTEM. Photo at right shows a "JAK-TUNG" truck being used with a Power Fork Truck and a "JAK-TUNG" Lift Unit for faster, more efficient handling, without loading and unloading. Truck capacities from 1750 to 6000 lbs. Can be "Job-Suited" to your needs with many THOMAS Superstructures. Available with special hitch for trailer train operation.

THOMAS TRUCK AND CASTER COMPANY
466 Mississippi River
KEOKUK, IOWA

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42 STOCK SIZES

HALLOWELL SOLID STEEL COLLARS

now size-marked for easy identification

Your HALLOWELL distributor now stocks these *size-marked* precision machined solid steel collars in sizes to fit shafts from 5/16" to 3" inclusive. And positive positioning of every HALLOWELL Collar is assured by the famous self-locking UNBRAKO Socket Set Screw—the screw that won't work loose. Write for literature and the name of your nearest HALLOWELL distributor. STANDARD PRESSED STEEL CO., Jenkintown 24, Pa.

HALLOWELL POWER TRANSMISSION DIVISION

SPS
JENKINTOWN PENNSYLVANIA

For more details circle NED-314 C4 on enclosed inquiry slip

Left— Union Special Style 20100 H Bag Closing Machine

Here's how to close MULTIWALL PAPER BAGS

FOR lower production costs ...stronger, neater closures ...ability to get out rush orders in a hurry, you can't beat Union Special Bag Closing Machines! Specially built to stand up under heavy production schedules, these machines provide the high output rates needed to meet modern competitive conditions.

In the Union Special line, it's easy to find the right unit to meet your particular requirements. ASK FOR RECOMMENDATIONS.

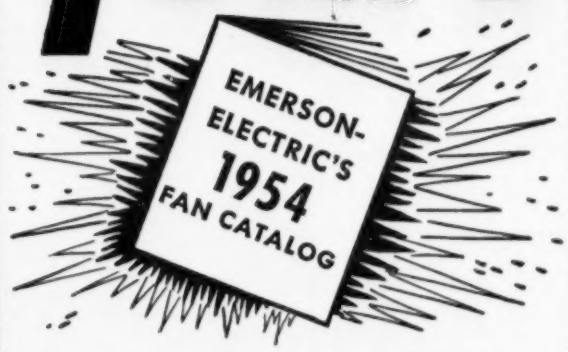
SEND FOR THIS BULLETIN!

Get your copy of this 16 page illustrated bulletin containing helpful data and charts on the complete Union Special line of bag closing machines. UNION SPECIAL MACHINE CO., 416 North Franklin Street, Chicago 10, Illinois

UNION SPECIAL

For more details circle NED-315 C4 on enclosed inquiry slip

yours



Again this year Emerson-Electric offers the most complete fan line in America . . . fans for a wide variety of commercial, industrial and institutional uses. See them all in the new 1954 fan catalog. Write today for Catalog No. 764.

THE EMERSON ELECTRIC MFG. CO.
St. Louis 21, Mo.

EMERSON ELECTRIC
FANS • MOTORS APPLIANCES

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Take surface temperatures quickly, accurately... with the

The handy Alnor Pyrocon is unequaled for quick, accurate reading of all surface temperatures . . . whether surfaces are metallic or non-metallic, flat or curved. Accurate temperatures are easily understood on the Pyrocon's direct reading scale face . . . without interpolation or need of conversion tables. A wide selection of thermocouples and extension arms permits adaptation to many types of service. For complete details and prices, send for Bulletin No. 4257. Illinois Testing Laboratories Inc., Room 529, 420 N. LaSalle Street, Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

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standard rated furnaces give buyer preview of costs, applications

Eliminate heat treating guess-work with a 'Surface' Standard Rated Furnace. You get pre-determined performance; known costs for every operation; standard designs with cost distributed over many units; adaptability (different sizes, different types of heating); versatility (variety of processes on both ferrous and non-ferrous metals). Write for Literature Group H53-13.

Surface HEAT TREATING EQUIPMENT

SURFACE COMBUSTION CORPORATION, TOLEDO 1, OHIO

Also makers of

SANITROL AUTOMATIC SPACE HEATING—KATHABAR HUMIDITY CONDITIONING

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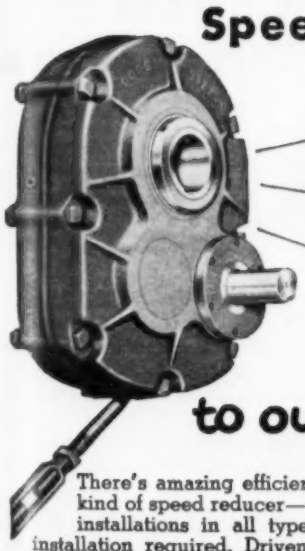
DODGE TORQUE-ARM Speed Reducer



Delivers up to 97% of Power to output shaft!

There's amazing efficiency and economy in this new kind of speed reducer—proved in tens of thousands of installations in all types of industry. No expensive installation required. Driven through any V-belt drive—stock Taper-Lock sheaves prescribed for desired speeds. Single and double reduction series, with capacities from 1 to 43 hp and output speeds from 12 to 330 rpm. Back stop and Tri-matic overload release available. Write for bulletin.

Dodge Manufacturing Corporation, 2100 Union St., Mishawaka, Indiana

DODGE of Mishawaka, Ind.

For more details circle NED-319 C4 on enclosed inquiry slip

DICTATING MACHINE as simple to use as a phonograph

Requiring no extra carrying case, completely enclosed 77 Voice-Master Dispatcher dictating machine weighs only 12 lb and is simple to use as phonograph. Features include self-tracking, instantly erasable Magic disk which automatically aligns magnetic needle; recording time of up to 10 minutes on each side of disk (convertible in the field to 15 minutes); Full-View dictation; outside-in motion; Professional arm with precision bearing; Pin-Point indexing; and 3-D playback through built-in speaker, confidential mike or lightweight receiver, with full-range fidelity. Convertible system allows older V-M models to be converted to synchronize with the 77's record-ease system. There are also automatic dictation volume, instant review back-spacer and automatic correction. Made by **Magnetic Recording Industries,** Dept. NED-1, 30 Broad St., New York 4, N. Y.

For more details circle NED-320 C4 on enclosed inquiry slip

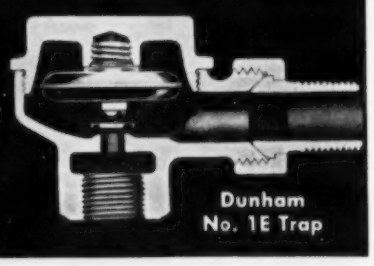
OFFSET DRIVESHAFT for fractional horsepower motors affords five final drive locations

Small, fractional horsepower series 500 induction motors can now be mounted in hard-to-reach places by means of offset driveshaft which enables final shaft to be brought out of gear housing at any one of five different locations, including standard center takeoff. Shaft speeds range from a single revolution in three days to top speed of 600 rpm. Throughout most of this range, final shaft can be brought out at any of newly-provided-for locations.

Standard takeoff shaft length is 1 in., but shafts up to 2½ in. long can be supplied. Series 500 motors are synchronous or nonsynchronous induction type operating on alternating current only. Speed of former is 1800 rpm. Motors can be stalled for indefinite periods of time without damage to wiring or overheating and will operate under load continuously for periods ranging into years. They are available in various torques. Applications include action type displays, mechanical devices such as laboratory equipment, dry processing equipment, rotisseries and airport beacons. Made by **Gleason-Avery, Inc.,** 49 Aurelius Ave., Auburn, N. Y.

For more details circle NED-321 C4 on enclosed inquiry slip

Why you can't clog DUNHAM RADIATOR TRAPS



You can tell at a glance why this Dunham Radiator Trap always assures easy passage of air, water, foreign matter.

Note, for instance, the extra-large, non-clogging valve seat opening—unrestricted by any guide. Also, that there are *no bellows to clog or stick.*

Dunham's factory-set Monel metal thermostatic disc with stop shoulder construction assures correct operation *without* field adjustment. Sealed under high vacuum, it gives positive response to temperature and pressure changes.

Made in 3 sizes; 6 patterns; 200 to 700 EDR.

For all the facts WRITE FOR BULLETIN NED-3.

DUNHAM HEATING SYSTEMS AND EQUIPMENT

Quality First for Fifty-one Years

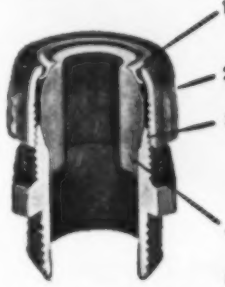
C. A. DUNHAM COMPANY, 400 W. Madison St., Chicago 6, Illinois

For more details circle NED-322 C4 on enclosed inquiry slip

NEW T&B ENGINEERED strain relief connector

- fits wide range of cable diameters
- oil-tight

For positive strain relief for all types of portable cords and cables, you'll find these new T & B connectors hard to beat. Just check the features below, we know you'll be convinced. T43



1. Brass retaining ring minimizes take-up friction . . . prevents damage by eliminating cable twisting.
2. Tabelite-finished steel gland nut . . . rust-proof, die-cast zinc alloy body.
3. Taper on both body and bushing gives double the take-up . . . assures a firm, permanent grip on any cable. Each fitting accommodates a wide range of cable diameters . . . you need stock only ½ your usual inventory.
4. Neoprene bushing is unaffected by oil, water, sun, or chemicals.
5. Available for .250" to 1.205" diameter cable.

Write for sample.

THE THOMAS & BETTS CO.

Incorporated

24 Butler Street, Elizabeth 1, New Jersey

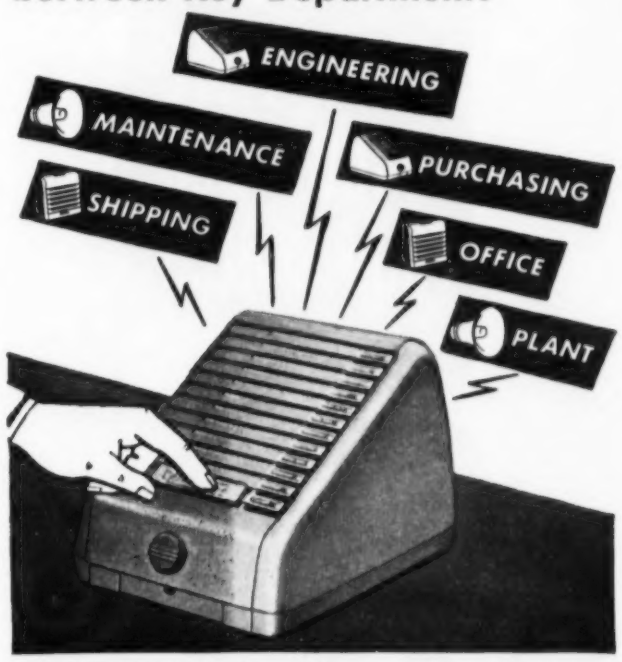
Thomas & Betts Ltd., Montreal, P.Q., Canada

MANUFACTURERS OF FINE ELECTRICAL FITTINGS SINCE 1898

For more details circle NED-323 C4 on enclosed inquiry slip

Step Up Production

with faster communication between Key Departments



EXECUTONE Intercom puts every department at your fingertips—*instantly!*

Production moves faster when you don't have to wait for information. With Executone you talk to any department, anywhere in your office or plant—*instantly!* No time lost running back and forth. No waiting on "busy" inside phones. You get more work done—*faster!*

In the NEW Executone voices are amazingly crisp and clear. Installed and serviced by Executone-trained technicians. Low cost Executone soon pays for itself in dozens of ways.

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Without obligation, please send me full data on Executone Intercom. I am particularly interested in:

- ☐ INTER-OFFICE COMMUNICATION
- ☐ INTRA-PLANT COMMUNICATION
- ☐ MATERIALS HANDLING CONTROL
- ☐ SWITCHBOARD RELIEF
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Address.....City.....

In Canada—331 Bartlett Ave.

For more details circle NED-324 C4 on enclosed inquiry slip

U.S. Royal Cords and Cables

Safety Tested!

Flexibility · Dielectric Strength
Smooth finish · Physical toughness

UNITED STATES RUBBER COMPANY
Electrical Wire and Cable Department
Rockefeller Center, New York 20, N. Y.

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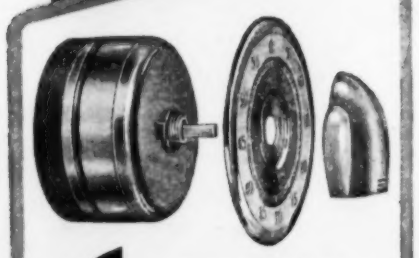
You can depend on the rugged

MARK-TIME "5400" Bell Time Switch



SPECIFICATIONS
UL approved for 20 ampere, 125 volt, 1 HP or 10 ampere, 250 volt operation, AC only. Timings available from 60 seconds to 5 hours. Normally supplied with center stud mounting. Other mountings available on request.

This Mark-Time switch is built to uphold the reputation of your product. Install it in your appliances, devices or machines, and give your customers a *double-purpose* time switch. "5400" turns OFF the circuit at the end of a pre-set time period . . . and gives a clear warning bell signal. Your customers will like that *double* service!

"5400" has a wide range of applications . . . is available with a wide variety of modern dials and knobs . . . can be supplied as an "ON" type of unit on special order.

Write today for full details and prices.

MARK-TIME
M. H. RHODES, INC.
HARTFORD, CONNECTICUT

Manufactured and sold in Canada by
SPERRY GYROSCOPE OTTAWA, Limited
3 Hamilton St., Ottawa, Ontario, Canada

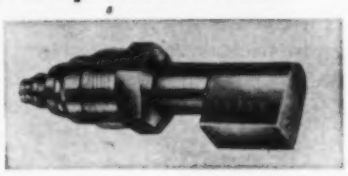
▲ For more details circle NED-326 C4 on enclosed inquiry slip ▲

STUD & INSERT KIT
has locking rings, installing tools

One size of inserts or studs together with locking rings, installation tools and directions for use are contained in each stud and insert kit now available in metal box for easy handling. Kits are available in all popular sizes of Rosan locked-in studs or inserts. They are practical in product development, overhaul, salvage, service and replacement work. Offered by **Rosan, Inc.**, 625 Coast Highway, Newport Beach, Calif.

▲ For more details circle NED-327 C4 on enclosed inquiry slip ▲

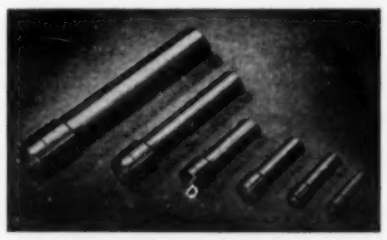
FLAME CUTTING TIP
added orifices for preheat flames



An added set of orifices positioned to allow six additional preheat flames to impinge directly on line of cut is feature of this NCG flame cutting tip. This permits fast cutting of bevels on steel plate of ½ to 2-in. thicknesses. Effect is the same as if heating tip, especially designed to avoid heat loss by deflection, were coupled to standard cutting tip. Tips are made in three sizes for use with oxygen and acetylene and attach to Torchweld No. 70 and 71 machine cutting torches. Made by **National Cylinder Gas Co.**, 846 N. Michigan Ave., Chicago 11, Ill.

▲ For more details circle NED-328 C4 on enclosed inquiry slip ▲

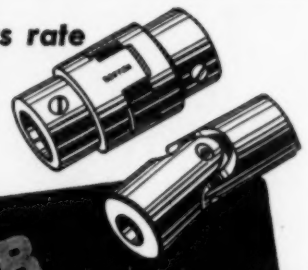
ROTARY STOCK STOP
for screw machines and turret lathes



Marring of finished end during stock feed is completely eliminated by use of a live head which rotates freely on the stock stop. Rotary stop is particularly useful for machining brass, aluminum and other soft materials. It is available with plain end or with center hole for teat in a wide range of standard sizes. The smaller sizes can also be furnished with full or small diameter nose to avoid interference with cross slide tools. Head is locked in position on the shank and runs on a precision bronze bearing. A take-up is provided for end-play adjustment. Made by **Barnaby Mfg. Co.**, 72 Knowlton St., Bridgeport 8, Conn.

▲ For more details circle NED-329 C4 on enclosed inquiry slip ▲

How cost-wise buyers rate
MACHINE DRIVE COUPLINGS



BETTER BOSTON Gear

Sleeve, Multi-jaw and FLEXIBLE COUPLINGS
UNIVERSAL JOINTS

IN STOCK AT 92 BOSTON *Gear* DISTRIBUTORS at Factory Prices

Look under "Gears" in the Yellow Classified Section of your Telephone Directory for the Distributor nearest you.

Get this Catalog . . . lists 5112 standardized machine parts . . . your reliable "textbook" of drive design and maintenance. Ask your BOSTON Gear Distributor, or write—Boston Gear Works, 69 Hayward St., Quincy 71, Mass.

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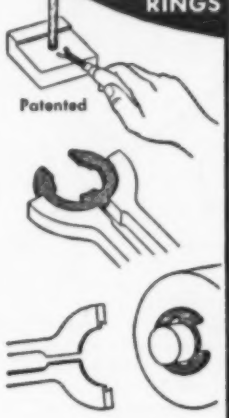
PROVE TO YOURSELF!



Speed Production Cut Costs

We GUARANTEE *faster* and *easier* assembly of open-type retaining rings . . . and less ring loss . . . with Industrial STACKED Retaining Rings. No more fumbling with tangled unstacked rings.

Try without risk. Full refund if Industrial's one-at-a-time modern dispensing does not reduce production costs. Industrial's specially designed base and tool are free with initial order. *Send today for new illustrated literature.*

Originators of Modern Dispensing

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MOUNT VERNON 4, NEW YORK

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The COOLING Units WITH ALL THE ADVANTAGES!

- For Cooling Cutting Oils
- For Diesel Cooling
- For Any Liquid In A Closed System

"BUFFALO" EVAPORATIVE WATER COOLER

1. INSTALLATION ECONOMY—Sectionalized construction permits moving thru standard doorways. Compact—can be installed near related units (outdoors, too).
2. WATER ECONOMY—Only slight loss thru evaporation. (Units operating efficiently in Arabian Desert, where all water is hauled in).
3. OPERATING ECONOMY—Efficient Evaporative Cooling Principle. Little fan and pump power required. Simple maintenance. CLEAN closed-system cooling.
4. POSITIVE, DEPENDABLE TEMPERATURE CONTROL proved by years in the Diesel field.

WRITE FOR BULLETIN 3666

BUFFALO FORGE COMPANY
215 Mortimer St. Buffalo, New York
PUBLISHERS of "FAN ENGINEERING" HANDBOOK
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.
Sales Representatives in all Principal Cities

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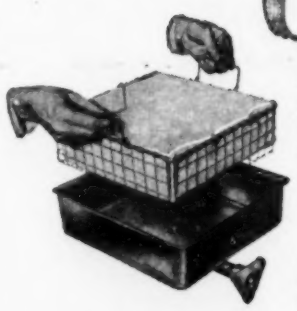
Now FOR SMALL FLOW FILTRATION

THE
Delpark *Junior*



Write for DELPARK JUNIOR BULLETIN

Designed for coolant filtration on grinders, hobbers, shavers, cutters, hones and lappers with small coolant flows. Filtration capacity on cutting oils ¼ to 1 g.p.m., soluble oils ½ to 1½ g.p.m.

Permits closer tolerance and finish requirements, greater machine efficiency and production, fewer rejects. Assures longer wheel and tool life, lowers coolant temperature. Requires no floor space. Disposable filter tray replaced in seconds. Allows cleaner working conditions.

INDUSTRIAL FILTRATION COMPANY
14 INDUSTRIAL AVE. LEBANON, INDIANA

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TOOL of a THOUSAND USES

TRI-SAW, All-Purpose, Portable Power Hacksaw

Still the same low price. ONLY $37.50

Makes Any Cutting Job Quick . . . Easy . . . Economical

Simply attach Tri-Saw to any 1/4" or 5/16" heavy duty drill—then zip through wood, sheet metal, heavy metal, nails, pipe and what have you, in seconds! Use this sensational time and work saving tool and you'll say it's the best all-purpose saw on the market. Only Tri-Saw gives you these exceptional features:

- No side torque or spin
- One shot lubrication
- Completely replaceable high speed bearings
- Improved dirt seal
- Needs no starting hole

See Tri-Saw at your jobber or write us for descriptive literature.

MANUFACTURED BY
TRI-SAW CORPORATION
2207 HANLEY INDUSTRIAL COURT • ST. LOUIS 17, MISSOURI

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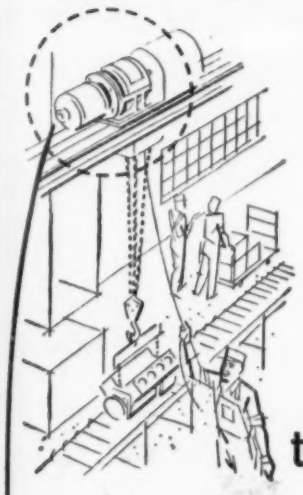
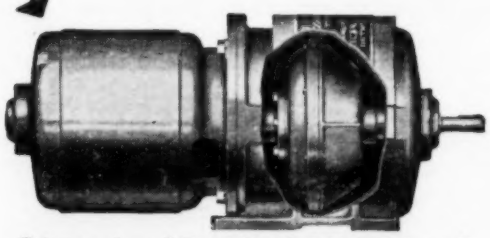


Save with GYROL FLUID DRIVE on electric traveling cranes

Lower initial cost: Fluid Drive units use a standard squirrel cage motor. Compared to a wound rotor motor, you save on motor, controls and installation costs. *Lower maintenance cost:* Controls are vastly simplified. No brushes, contacts or resistors to clean or replace. *Lower HP motors:* With Fluid Drive, motors reach 80-90% of starting torque before engaging the load. Thus, lower HP motors can often be used, improving over-all plant power factor. *Less pendulum action:* Fluid Drive provides smooth, stepless acceleration. Puts the load in motion with minimum jerking or swinging.

Advantages of American Blower Type TM Gýrol Fluid Drives



Cutaway view of Type TM Gýrol Fluid Drive unit

- Provides smooth flow of power. Shocks are absorbed in a cushion of oil. There's no metal-to-metal contact between driving and driven machinery.
- Offers by its inherent shearpin action, selective overload protection for both motor and driven machinery. Decreases machine "down" time.
- Available as a complete packaged unit suitable for either direct or belt connection to the driven machine. Minimizes alignment problems.

Free trial units are available to original equipment manufacturers

AMERICAN BLOWER

American Blower Corporation, Detroit 32, Michigan
Division of American Radiator & Standard Sanitary Corporation

Serving home and industry:
AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS & WALL TILE • DETROIT CONTROLS • KEWANEE BOILERS • ROSS EXCHANGERS • SUNBEAM AIR CONDITIONERS

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TURRET INDEXING UNITS with 8 to 32 work stations

Clutch operated series of turret indexing units is available with 8, 16, 24 or 32 work stations and 20, 30 or 40-in. turret diameters. Dwell times range from 0.835-second to infinity and maximum indexes per hour range up to 2154. Solenoid operated clutch drive can be adapted to variable or infinite work cycles or where the operator must determine the indexing cycle by pushbutton controls. Limit switches can be used to prevent indexing before any given operation such as drilling is completed. Made by **Swanson Tool & Machine Products, Inc.**, 808 E. Eighth St., Erie, Pa.

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LOCKING CAP & CONNECTOR now available in 20-amp rating

Three-wire Turnex locking attachment cap (No. 2608) and cord connector (No. 2708) are now available with rating of 20 amp, 250 v, ac or dc. They cannot be disconnected accidentally. Nonbreakable exteriors are made of NeoTex neoprene compound impervious to oils, greases and most chemicals, together with extra heavy duty brass contacts. Molded-in cord grip is made to take heavy duty cords and will not pull out. Turnex models are interchangeable with other standard locking caps and connectors. Made by **Daniel Woodhead Co.**, Dept. 103, 15 N. Jefferson St., Chicago 6, Ill.

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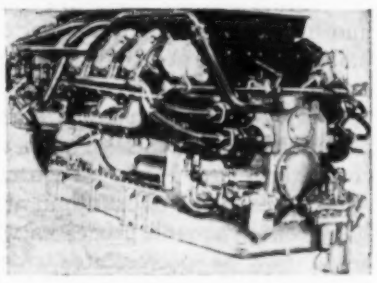
AIR-COOLED ENGINES rated at 375 to 1040 hp



Line of air-cooled internal combustion engines developed in collaboration with Army Ordnance as power for military vehicles is available for industrial use. Features include light weight, compactness and ease and economy of servicing. Available are six cylinder model with 375 hp, 500-hp supercharged version of this engine, 12-cylinder 810-hp model and a supercharged 12-cylinder model developing 1040 hp. Made by **Continental Motors Corp.**, Dept. 1, 205 W. Market St., Muskegon, Mich.

▲ For more details circle **NED-338 C4** on enclosed inquiry slip ▲

perfect bridge between truck and dock

RITE-HITE®

ADJUSTABLE LOADING RAMP

Exclusive Precision Counterbalance . . . horizontal adjustment . . . simple mechanical design . . . no pipes, pumps, gears, motors — little or no maintenance needed.

CAPACITIES
10,000 and 20,000 lbs.

3 TYPES 5 MODELS

- Permanent
- Self-Contained Dock and Ramp
- Flush type

RITE-HITE DIVISION
LOOMIS MACHINE COMPANY
FOURTH AND PINE STS. • CLARE, MICH.

GET THE FACTS AND YOU'LL GET RITE-HITE
Write Dept. B-34.

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NEW! LOW PRICE MOBILE TANK SPRAYER

No. 450 Complete Outfit
$169.00
With rubber tired wheels and rubber pads, internal mix spray gun, tire chuck and air hose.

Automatic pressure switch starts motor when pressure in tank drops to 30 lbs.—shuts off at 45 lbs. Twin compressor mounted on heavily welded 11½ gal. tank delivers 4 cu. ft. of clean, oil-free air per minute. Equipped with ½ h.p. A.C. motor, factory lubricated. Dozens of handy maintenance and production uses. Ask your mill supply house or write direct for catalog.

Write today for catalog
Compressors High & Low Pressure
Paint Sprayers
Spray Guns

W. R. BROWN CORP.
2673 N. NORMANDY AVE., CHICAGO 35, ILL.

SPECIALISTS IN PORTABLE SPRAYERS FOR OVER 20 YEARS

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use your **JOHNSON** bearing distributor

He will save you delays because he stocks a wide range of Johnson Sleeve Bearings and Bronze Bars. He saves you machining time because Johnson Bearings will fit over 90% of your sleeve bearing needs. He saves you money because he can furnish you low cost, standard, stock size Johnson Bearings at much less than made-to-order bearings. Write for the Johnson Bearing Catalog.

JOHNSON BRONZE CO.
580 South Mill Street
New Castle, Pa.

JOHNSON B BEARINGS
Sleeve Type

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SHEEHAN

METAL MESH BELT
CONVEYORS for Quenching

SHEEHAN Conveyors are tried and proven in the field to give longer quenching time, and more efficient performance to fit YOUR particular needs. Use SHEEHAN Conveyors with confidence . . . because they are practically maintenance-free. Inquire today why SHEEHAN Conveyors do the job right with the SHEEHAN positive drive, spike-studded pulley feature.

YOUR PROBLEMS! — May we analyze your conveyor problems? Complete engineering "Know How" available. Sheehan Conveyor users have saved thousands of dollars in floor space, material handling and manpower. There's a SHEEHAN Conveyor for most industrial use.

R. T. SHEEHAN CO.
8033 N. Territorial Rd. • Plymouth, Michigan

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THIS 6000 LB. GRAB is Revolutionizing Roll Handling

KRAFT PAPER

NAPKIN TISSUE

SOUND-DEADENING FELT

Handles rolls to 6000 lbs., 24" to 60" diameter, 72' long. All motions motorized and controlled from crane cab. Turns rolls from vertical to horizontal. Handles various materials without damage.

WRITE FOR BOOKLET 2012 GIVES DETAILS

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
6605 East 285th Street, Wickliffe, Ohio

CLEVELAND TRAMRAIL

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AUXILIARY STOCKROOMS —Wherever you need them!

STACKBIN® sections will give you a stockroom wherever you want it—quickly and easily as building a sectional book case. These patented sectional storage bins nest together without the use of tools—cost you nothing to build, nothing to move. Find out today how STACKBINS can lower YOUR handling costs.

IMMEDIATE SHIPMENT
Manufactured and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa
Write Stackbin Corp., 1081 Main St., Pawtucket, R. I.

STACKBIN SYSTEM
"Stacked and Still Accessible"

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MADE FOR MAINTENANCE!

BECKER "53"
CO₂ POWERED INDUSTRIAL
SPRAY GUN
Completely Portable

ONLY $19.95 with 10 cartridges

The new, versatile Becker Model "53" Sprayer operates without hoses, cords, or compressors. Sprays protective coatings, paints, solvents, cleaners, oils, etc. Powerful low-cost CO_2 cartridge sprays up to one 21-ounce containerful. With special attachment, tank can be charged from air hose (for liquids atomizing at 120 psi). Nozzle removes without pressure loss, adjusts from spray to stream. Acme-threaded neck closure, rugged brass and stainless inserts, cast aluminum head. See your Distributor or order direct postpaid.

SULLIVAN-BECKER CO. Dept. 174-C KENOSHA, WISC.

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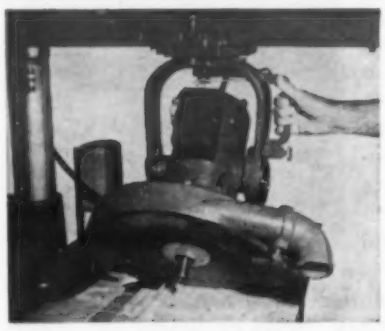
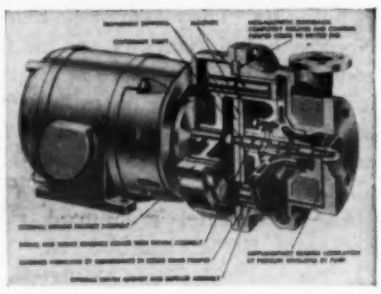
SAFETY CARRIAGE LOCK
for radial woodworking machines



Designed in the interests of operator protection, safety carriage lock is optional equipment for DeWalt GE, GA and GW radial arm woodworking machines. A thumb plunger is depressed by the operator to move carriage on its tracks. When pressure is removed because operator is distracted from his work or because of an emergency, carriage is automatically and positively locked. Lock holds the carriage stationary when the machine is not in use or is being used for ripping, and can be instantly disengaged when machine is used in conjunction with chain or screw cross feed device. Made by **DeWalt Inc.**, Dept. P-108, Lancaster, Pa.

▲ For more details circle NED-346 C4 on enclosed inquiry slip ▲

MAGNETIC-DRIVE PUMP
horizontal centrifugal type pumps 150 gpm at 70-ft head



Complete sealing of liquid end of this end-suction, horizontal centrifugal type pump is accomplished by use of a true magnetic drive. Power is transmitted from 1, 1½ or 2-hp motor operating at 1760 rpm to pump by principle of matching magnetic fields, from adjacent opposite poles, mounted around periphery of driving and driven elements. Since no connection exists between driving and driven magnets, a nonmagnetic diaphragm is employed to separate the driven or liquid end of pump from driving end.

Driving motor can be of standard, totally-enclosed or explosionproof design with any required electrical characteristics. Pump measures only 1 x 2½ x 8 in. and has capacity of 150 gpm at 70 ft head. Applications center around processes where closed system of liquid flow is necessitated, where contamination to liquid bearing pump cannot be tolerated, or where leakage of liquid handled is not permissible. Hazardous, toxic, odoriferous, extremely hot or cold as well as highly corrosive liquids can be handled. Liquid end of pump can be constructed of suitable materials to meet application requirements. Made by **Food Machinery & Chemical Corp.**, Peerless Pump Div., 301 West Ave. 26, Los Angeles 31, Calif.

▲ For more details circle NED-347 C4 on enclosed inquiry slip ▲

Save Time...Labor...Material with BEVERLY metal cutting SHEARS

throatless SHEARS

Make any cut—straight, irregular, curved. Exclusive design permits turning work any direction while cutting. 4 models—cap. to 3/16".

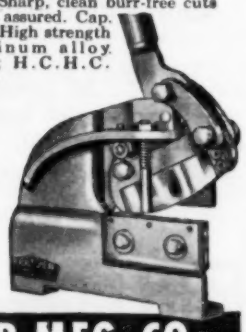
Inside SLOTTER

Makes cuts up to 8" inside edge of sheet. Sharp, clean burr-free cuts always assured. Cap. 16 ga. High strength aluminum alloy body; H.C.H.C. blades.

slitting SHEAR

New "SS" Series—easier cutting with compounded linkage. 3 models—cap. to ⅛"; trimming capacity to ¼" mild.

See your Beverly Distributor. Write for FREE illustrated Bulletin.



Beverly SHEAR MFG. CO.
3016 W. 111th STREET • CHICAGO 43, ILLINOIS

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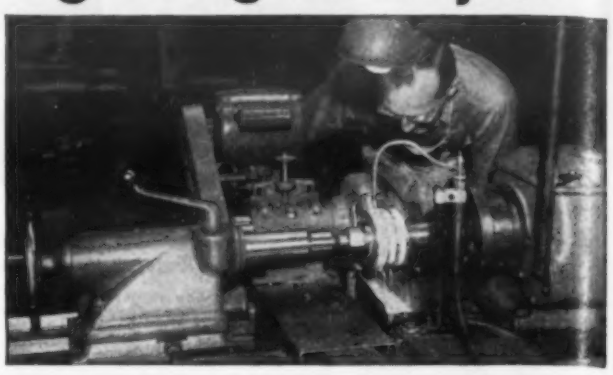
Here's fast, inexpensive grinding for die jobs



Plunge grind with a Dumore saves time, money and trouble on die-reconditioning job

The Virco Mfg. Co., Garden City, Calif. used to send tube forming roller dies "out" for reconditioning. Today, the job's done in their own shop . . . in 1½ to 2 hours . . . at a fraction of the $30 to $40 it used to cost. These savings are possible because of a versatile, lathe-mounted Dumore Tool Post Grinder which permits swinging an 8" x 1¼" x ¾" wheel and using a direct plunge to grind the required ½" radius.

Versatility like this is another reason why Dumore Grinders are a favorite with production, maintenance and tool room men everywhere. To see how Dumore Grinders can help you — contact your Industrial Distributor, or write —

DUMORE PRECISION TOOLS
THE DUMORE COMPANY
1333 Seventeenth Street • Racine, Wisconsin

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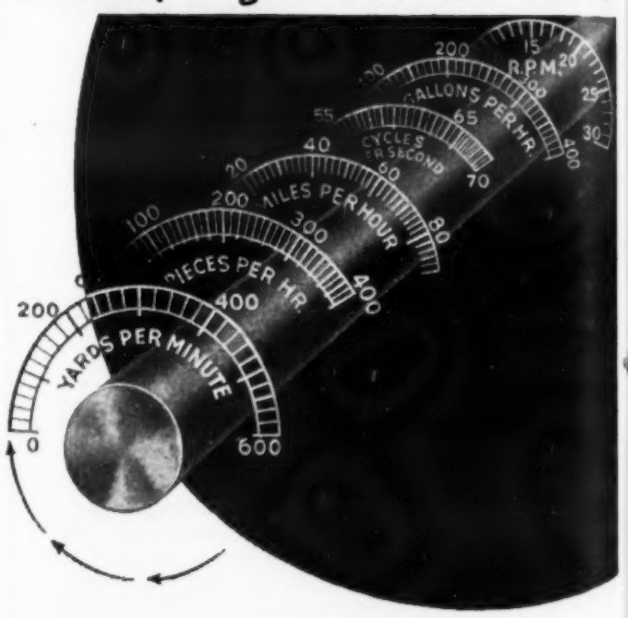
If some part goes 'round and 'round



...WESTON Electrical Tachometers

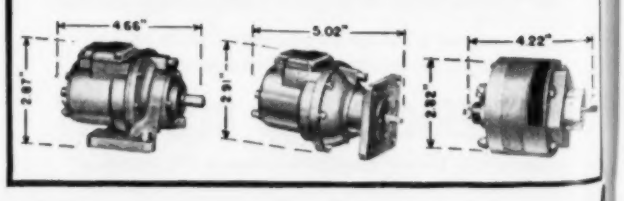
can provide a simple, accurate key to control!

Wherever instant, accurate measurement furnishes the key to precise control, equipment manufacturers now build-in WESTON Electrical Tachometers. For no other method approaches the electrical tachometer for simplicity, ease of installation, overall dependability and ready adaptability to problems of design.

The specially designed WESTON A-C and D-C Tachometer Generators, for example, save up to 50% in size and weight, and are available in forms to permit wide flexibility in mounting, and in connection arrangements. The WESTON Indicators, too, are available in required sizes and shapes, calibrated in any function of the RPM. Available to directly indicate speeds as low as 1/10 RPM up to 80,000 RPM.

Other advantages of electrical tachometers such as . . . multiple indications from one generator . . . remote indications . . . dependable, long-term accuracy . . . and low maintenance, warrant full investigation. Complete details gladly sent on request. WESTON Electrical Instrument Corporation, 614 Frelinghuysen Ave., Newark 5, N. J.

Space-saving • Weight-saving WESTON Generators



WESTON Instruments

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RELIANCE SNAP RINGS

SLASH PRODUCTION COSTS and SAVE MATERIAL

AVAILABLE IN MANY SECTION SIZES AND VARIOUS GAP DESIGNS

SEND TODAY FOR FREE ENGINEERING BULLETIN 4K/3

EATON

EATON MANUFACTURING CO.
RELIANCE DIVISION
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Sales Offices
NEW YORK • CLEVELAND • DETROIT • CHICAGO
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Feature-packed!

New SQUARE D SIZE 4 STARTER

Write for BULLETIN 8536...

Square D Company, 4041 North Richards Street, Milwaukee 12, Wisconsin

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

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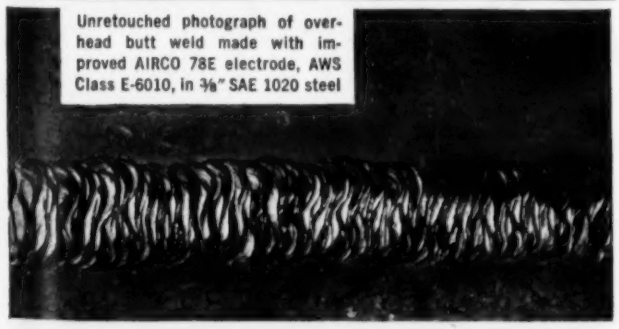

Unretouched photograph of overhead butt weld made with improved AIRCO 78E electrode, AWS Class E-6010, in 3/8" SAE 1020 steel

Make mild steel welds like this in any position with the

A smooth-looking weld, yes, but appearance is only part of the story with the improved AIRCO 78E electrode for the all-position DC welding of mild steel. The 78E's improved flux coat gives you higher current capacity and faster burn-off rate . . . without "fingernailing" or slag and gas inclusions in the weld metal. Result: in all positions, weld quality is as good as its smooth outward appearance. Write for your copy of "Pocket Guide to Airco Electrodes."

improved AIRCO® 78E

AIR REDUCTION
60 E. 42nd Street
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Air Reduction Sales Co.
Air Reduction Magnolia Co.
Air Reduction Pacific Co.
Represented internationally by Airco Company International
Divisions of Air Reduction Co., Inc.

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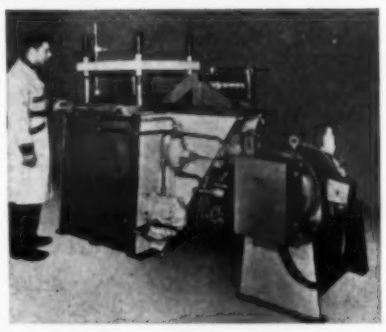
ELECTRIC FORK TRUCK
low-clearance, narrow-width type designed for close-quarter work

Designed to simplify pallet loading in any tight space, Safety Silhouette electric fork lift truck is built on a 50-in. wheel base, has 36-in. forks, pivots round a 90-degree corner in a 61-in. aisle and can make a right-angle turn in a 119-in. aisle. Forks are adjustable from 10 to 31½ in., outside measurement, and can be tilted 3 degrees forward and 10 degrees backward from the perpendicular. Loads can be stacked 100 in. above floor level. Truck is available in 2000 and 3000-lb capacities.

Although the mast height is only 68 in., seating position is so designed that operator's head is always below this level. Driver's seat is accessible from both sides and centralized lift tilt and attachment controls are fitted in addition to a "dead man's" seat. Made by **Yale & Towne Mfg. Co.**, Yale Materials Handling Div., Dept. M-1, Roosevelt Blvd. & Haldeman Ave., Philadelphia 15, Pa.

▲ For more details circle NED-354 C4 on enclosed inquiry slip ▲

INVERTED HYDRAULIC PRESSES
for stamping and extrusion are compact and versatile in use



Inverted vertical hydraulic presses are adapted to bending and extrusion operations on ferrous and nonferrous parts as well as upsetting, deep drawing and coining. Multiple operations such as piercing and deforming can also be done. Presses have hydraulic control cylinder in the base, which minimizes overall height, avoids shut height limitations and provides areas at the top and sides for mounting auxiliary hydraulic cylinders.

Vertical die travel is limited only by cylinder stroke, variable shut height adjustments being made by turning spanner nuts on the threaded ends of the four actuating guide rods. Unit illustrated has 20 x 24-in. die area, and die travel of 6 in. Main cylinder is rated at 100 tons and auxiliary cylinder rated at 75 tons. Hydraulic power pack and pressure boosters are shown at the right. Made by **Walter P. Hill, Inc.**, Dept. 1, 22183 Telegraph Rd., Detroit 19, Mich.

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Write for Catalog 700

External Adjustments No Tools Required

MERCOID® PRESSURE CONTROLS

Ranges Available from 30" Vac. to 2,500 PSI. Fully Adjustable as to Range and Sensitivity. Bourdon Tube Operated —Visible Calibrated Dial. Mercoid Sealed Mercury Contact —Immune to Dust-Dirt-Grease-Corrosion-Pitting-Sticking.

THE MERCOID CORPORATION
4201 BELMONT AVENUE, CHICAGO 41, ILLINOIS

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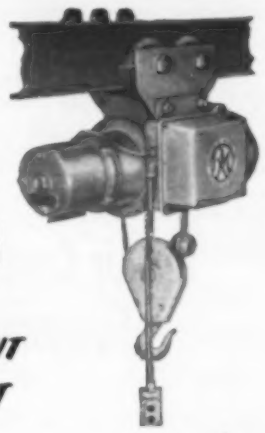
Robbins & Myers NEW J3 hoist.



beef

WITHOUT THE FAT

Featuring: new lower limit switch — heat treated steel, helical and straight gears—precision ground shafts—oversize ball bearings throughout — single unit cast aluminum alloy housing — plow steel cable — safety enclosed hook block — forged steel hook — safety push-button control — choice of lug, plain, geared or motor driven trolley mountings — 2,000 or 4,000 lb. capacities — R & M high torque hoist motor — single or 2 speed winding optional — magnetic disc type motor brake — and prices competitive with the cheapest hoists in this range! For complete details and address of local distributor, write for Bulletin No. 890. Please mention: NEW EQUIPMENT DIGEST.

take it up with

ROBBINS & MYERS, INC.
SPRINGFIELD, OHIO | BRANTFORD, ONT.

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NOW... GET ALL THE FACTS
ON DU PONT EXPLOSIVE RIVETS

Send for this free, new manual today!

Just what are Du Pont Hi-Speed Industrial Explosive Rivets? What can they do? This new manual gives you the facts straight and simple. Explains all about Du Pont Explosive Rivets: how they work . . . why and where they're used . . . and how to use them. Packed with pictures, tips, tables, specifications. It's the full story, including a complete description of the new, blast-free (noiseless) type.

Today, millions of these Rivets are being used in fastening work of all types . . . on cars, trucks, bus bodies, machinery, switch-gear and other assemblies. They simplify *every* job. Make "blind" work a cinch . . . solve hard-to-get-at fastening problems . . . speed open-seam jobs. You can set up to 25 a minute. No bucking bar or after-finishing needed. With Explosive Rivets, fastening's a simple, one-man operation!

Interested? To get *all* the facts on Du Pont Explosive Rivets, send for this free, new manual NOW. It's the first step toward quicker fastening —lower costs! Contact your nearest Du Pont Refinish Service Warehouse or write: E. I. du Pont de Nemours & Co. (Inc.), Explosives Department, 11502 Nemours Bldg., Wilmington 98, Del.

DU PONT *Hi-Speed* INDUSTRIAL EXPLOSIVE RIVETS
A Product of Du Pont Explosives Research

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

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Schrader's "Automatic Oil Can" for Air Control Equipment

You'll get far better service and longer life from your air control products if they are lubricated regularly. And there's no better way to do this than with the automatic **Schrader Lubricator.**

Operating on the venturi principle, the lubricator continuously mixes small drops of oil with input air. Connected right in the air line, it has no moving parts. Its transparent plastic bowl shows oil level at all times.

Full details on the Schrader Lubricator—and the complete Schrader line—are available. Write for them today.

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
459 Vanderbilt Avenue, Dept. E-33, Brooklyn 38, N. Y.

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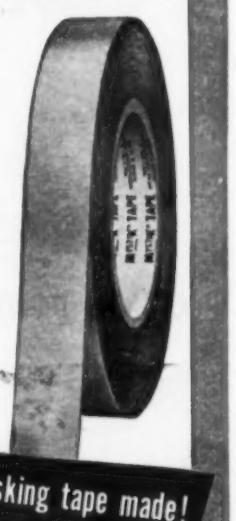
MYSTIK BRAND · SELF-STIK

NEW Thinflex® 6207 MASKING TAPE



FASTEST and best masking tape made!

Extra thin . . . for cleaner, sharper-line masking. Greater *flexibility* . . . for masking curves faster. Extra *strength* . . . to hold positively yet strip off fast in one piece. Resists stains, oils, solvents—leaves no residue. Gives on-the-job speed and results for a faster, better job . . . *at lower cost.* Write for information and free samples. Mystik Adhesive Products, 2657 North Kildare Avenue, Chicago 39.

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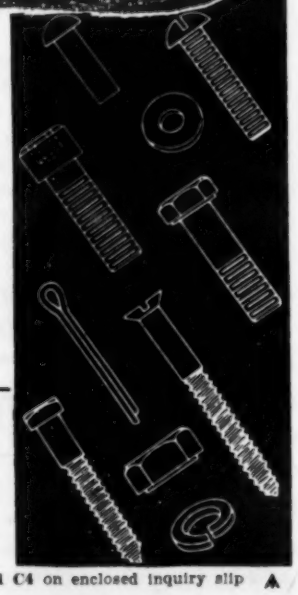
STOP CORROSION with HARPER

EVERLASTING FASTENINGS BY THE DOZENS OR BY THE MILLIONS

If you use fastenings of brass, bronze, copper, monel, aluminum or any stainless steel, you can get what you want from Harper. Over 7,000 items stocked—all backed by Harper's advanced metallurgists and skilled engineers. See your Harper Distributor.



HARPER

EVERLASTING FASTENINGS

The H. M. Harper Company
8212 Lehigh Avenue
Morton Grove, Illinois
Please send me Harper Catalog.

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Address.....
City.....*State*.....

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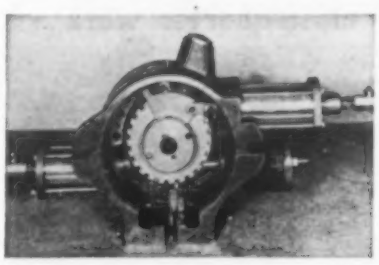
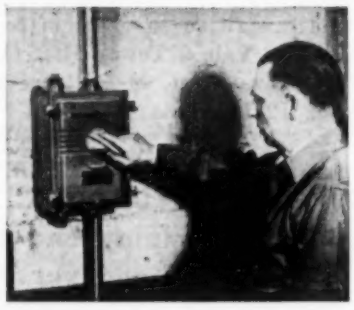
INDEXING MECHANISMS now have integral shock control



Now featured on Erickson Speed Indexers is this integral shock control unit which assures constant, uniform feed while allowing maximum speeds without danger of damage to mechanism or work. As shown in rear view illustration, piston of control unit, at upper right, is linked directly to indexing mechanism, is self-contained and works independently of actuating fluid. All indexers can be operated by either air or hydraulics and used in vertical or horizontal position. Made by **Erickson Tool Co.,** 2311 Hamilton Ave., Cleveland 14, O.

▲ For more details circle **NED-362 C4** on enclosed inquiry slip ▲

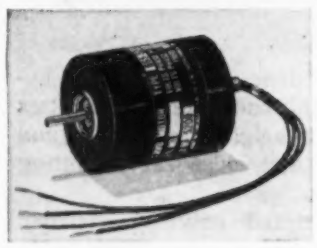
SWITCH ENCLOSURES designed for corrosive atmospheres



Lead-plated sheet steel enclosures for safety switches and circuit breakers are designed for use in outdoor, humid, dust-laden or corrosive atmospheres. The inert lead coating effectively resists the effects of acid, alkali and salt spray. Weight of the enclosures is less than that of similar cast-iron types. Made by **General Electric Co.,** Trumbull Components Dept., Dept. M-3, 41 Woodford Ave., Plainville, Conn.

▲ For more details circle **NED-363 C4** on enclosed inquiry slip ▲

SERVO MOTORS precision units are 1½-in. diameter



High precision type 52 servo motors are available in a wide variety of speeds and electrical characteristics. Measuring 1½-in. diameter, they can be supplied to military specifications of humidity, temperature, vibration and altitude. Stators are embedded in an insulating compound of high dielectric strength which is stable at elevated temperatures. Choice of stainless steel or aluminum housings and of stainless steel or SAE 52100 steel ball bearings is available. Rotors are centrifugally cast and laminations are of high nickel steel. Made by **G-M Laboratories Inc.,** Dept. K, 4300 N. Knox Ave., Chicago 41, Ill.

▲ For more details circle **NED-364 C4** on enclosed inquiry slip ▲

New Bond S-L-U* DRUM TRUCK . . . for faster, easier handling

- Spring action chime hook.
- Floating axle with rolling motion.
- Rugged all steel welded construction.
- Two wheel types: vulcanized-on rubber tread or semi-steel.
- Rests in tilted position for maximum drainage.
- Stands upright for safe storage.

The *new* Bond *Self-Loading and Unloading Drum Truck takes "the work" out of lifting, moving and draining either drums or barrels . . . and speeds the job at that! Like every hand truck in the full Bond line, this drum truck is designed and built to give extra service, extra satisfaction!

Write today for your copy of Bond Bulletin R-61 . . . it gives all the facts on the new Bond Drum Truck.

BOND FOUNDRY & MACHINE COMPANY
Manheim, Pennsylvania

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Shredded Paper IS THE IDEAL PACKING MATERIAL

produce it yourself for . . .

(1) Real dollar & cents savings
(2) Minimum inventories
(3) Substantial space savings
(4) Dependable supply

Test a "Silver" paper shredder in your own shop without obligation—Get complete details by writing *today* to:

INDUSTRIAL SHREDDER & CUTTER CO.
107 Mill Street Salem, Ohio

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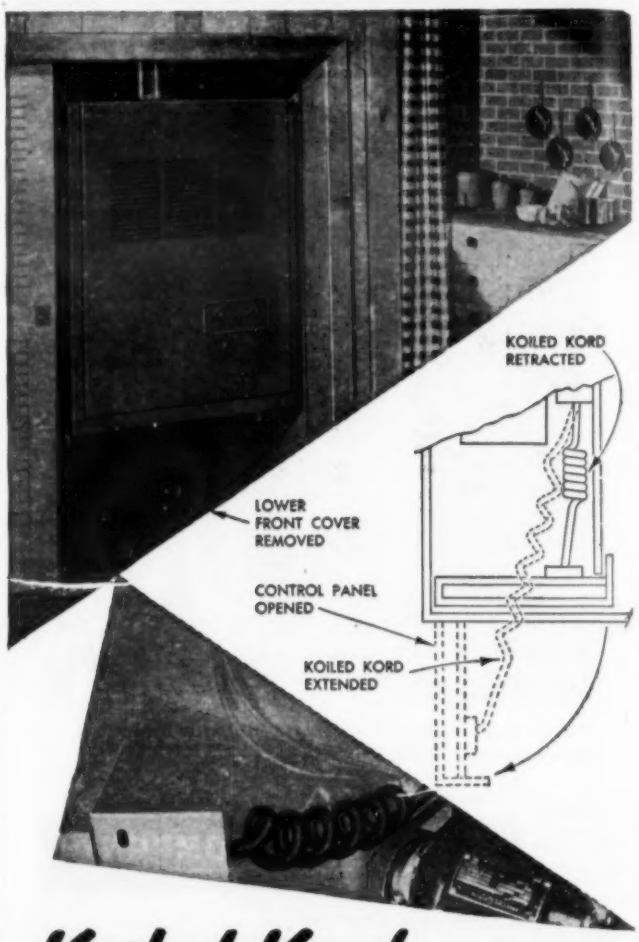

***Koiled Kords* permit EASY MAINTENANCE on the Carrier Weathermaker**

For easy maintenance, the control panel of the Carrier Year-round Home Weathermaker swings out to expose the compressor unit. The compressor lead is a retractile cord which extends as the panel swings out, then retracts into a neat out-of-the-way coil when the panel moves back into place. Koiled Kords make it possible to inspect the unit while it is in operation, making maintenance easier and quicker.

The Weathermaker shown uses a three conductor No. 14 SO cord. Koiled Kords are also available in No. 18 SV, No. 18 and 16 SJO and in No. 12 SO with 2, 3 and 4 conductors. Approved by Underwriters' Laboratories. Larger and smaller Koiled Kords can be furnished for special applications.

On electrical equipment that moves, Koiled Kords are { SAFE, COMPACT, CONVENIENT, LONG LASTING

Write for further information on how Koiled Kords can solve your design and maintenance problems.

Koiled Kords INCORPORATED BOX K, NEW HAVEN 14, CONN.

PHOTOS COURTESY CARRIER CORP.

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All-Purpose AMF De Walt is best for plant maintenance!

Reynolds Tobacco Co. has used De Walt 26 years

You'll find *one* low-cost AMF De Walt® will meet *all* your plant maintenance needs—and that includes all types of construction work and boxing and crating.

Just one De Walt turns out pallets, conveyor bucks, crating, book shelves, ladders and many other products. It's amazingly versatile—cross-cuts, miters, bevels, rips, dadoes, shapes and many others! Tops in speed, accuracy and safety, too.

Send for catalog to De Walt Inc., Dept. NED-54-3, Lancaster, Pa.

De Walt Inc. Lancaster, Pa.

DE WALT

POWER SAWS

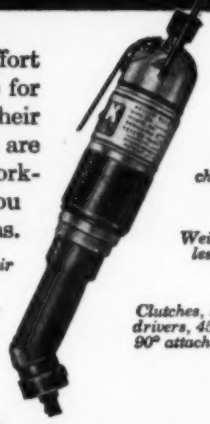
In Canada: De Walt Canada Ltd., Guelph, Ontario

Subsidiary of AMERICAN MACHINE & FOUNDRY COMPANY, New York

For more details circle NED-368 C4 on enclosed inquiry slip

Less Fatigue More Production WITH KELLER AIR TOOLS

Less expenditure of physical effort means more energy available for intelligent workers to "use their heads." When they know you are providing the *best* air tools, workers are better satisfied—and you have improved labor relations.



Interchangeable parts

Weigh less

Consume less air

Reduce operator fatigue

Variety of handles, gearings, torques, speeds

Clutches, socket drivers, 45° and 90° attachments

Send for illustrated descriptive bulletin and detailed information

KELLER TOOLS

Keller Tool Company

GRAND HAVEN, MICHIGAN

For more details circle NED-369 C4 on enclosed inquiry slip

Precision tapping costs less on your drill press with "Auto-tap"

TRADE MARK

LEAD SCREW TAPPING ATTACHMENT

- Utilizes unskilled help and low-cost equipment
- Less scrap means more profits for you
- Longer tap life—less tap breakage
- Easily installed on column or gib drill presses
- Prices for interchangeable lead screw and support arm start at $59.50

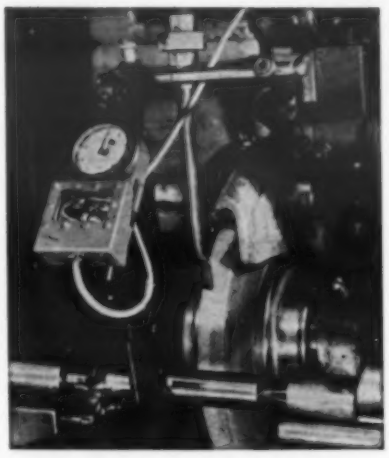
Send for Bulletin

Automatic Methods INC.
PRECISION PARTS FOR AIRCRAFT

953C West Grand St. Elizabeth, N. J.

For more details circle NED-370 C4 on enclosed inquiry slip

ELECTRIC GRINDING GAGE retracts wheel when size is reached

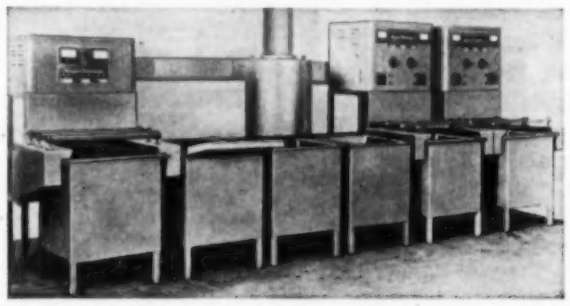


Automatic size control for cylindrical grinders is provided by model 133M series electric grinding gage which retracts wheel when final size of workpiece is reached. The gage rides the work during the grinding cycle and controls the wheelhead feed mechanism. It provides rapid grinding until work diameter is 0.0005 to 0.004-in. of final size, and after that, a slow sparkout feed. It will hold production grinding tolerances to 0.00005-in. Unit is protected from splashing coolants and is provided with tolerance limit setting screw with a simple screwdriver adjustment. A separate power unit eliminates necessity for manually resetting gage between cycles. Circuit is arranged so that in event of malfunction or power failure, grinding wheel backs up automatically. Made by **Federal Products Corp.**, 1118NR1 Eddy St., Providence 1, R. I.

For more details circle NED-371 C4 on enclosed inquiry slip

HARD CHROME PLATING UNIT package unit gives precision results

Package precision hard chrome plating unit includes six tanks, lead and Neoprene tank linings, five rectifiers, a fume separation system, heat and timing



controls and electrical connections ready for immediate installation. Equipment is based on the Morey process, and an intensive course of instruction is given with it on the advanced phases of precision plating. By means of equipment, undersize tools and parts are readily restored to original dimensions, including taps, drills, reamers, bushings, shafts, gears and cams. Features of equipment include automatic electric heat control and timing system, rectifiers which permit two jobs to be plated simultaneously in the same tank and built-in air purifying unit. Made by **Wagner Brothers, Inc.**, 426 Midland Ave., Detroit 3, Mich.

For more details circle NED-372 C4 on enclosed inquiry slip

HOW YOU CAN *hear better* TO TELEPHONE

Loudness of Noise Reduced 50%* Inside a

BURGESS-MANNING *Acousti-Booth*

- Thick walls of sound absorbing material, patented design, and craftsmanlike construction reduce the loudness of noise by 50%*... leaving a zone of quiet for ease of telephoning.
- Doorless construction makes for a light, airy, well ventilated booth ... easy to keep clean ... low maintenance.
- Easy to move ... Suited to any noisy location ... Wall and floor models ... Handsome in appearance.

Write for Bulletin A-124 Model 211 Floor Model

** Based on studies by a prominent research organization.*

BURGESS-MANNING COMPANY

Architectural Products Division

5970-C Northwest Highway, Chicago 31, Illinois

For more details circle NED-373 C4 on enclosed inquiry slip

faster, more positive selection of stainless electrodes...

this FREE folder helps you choose the right weld metal when welding...

If you do any maintenance or repair welding on stainless steel(s), you'll be glad for this practical information. All you need know is the "A.I.S.I." type, or "trade name" of the steel to be welded ... or the properties required. The folder quickly tells you the proper electrode to use! It's based upon years of Arcos research and field work that assures you physically, chemically and metallurgically sound weld metal on every job.

- Stainless or Alloy steels
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- Dissimilar metals
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- To meet corrosion, heat, or strength properties
- SEND FOR YOUR COPY TODAY! Ask for folder, "What Electrode Would You Use?"

ARCOS CORPORATION

1500 South 50th Street • Philadelphia 43, Pa.

For more details circle NED-374 C4 on enclosed inquiry slip

Win the Germ War!

Use PIONEER Stanzoils®

Only a liquid-tight glove gives positive physical protection from chemicals and germs that cause hand dermatitis. Also protects products from contamination by hands.

PIONEER *milled* neoprene stands extra hours of use in contact with oils, acids, caustics, detergents and solvents—has higher tensile, greater tear resistance than any other oil-resistant rubber.

Super-safe grip creates confidence, speeds work—handles wet slippery objects as if dry.

32 PIONEER styles, weights sizes and colors. Send for Stanzoil catalog—shows quickly how to select best, most economical glove for each job.

Stanzoil N-30 Whitecaps lightweight neoprene, sanitary white. Non-slip grip, curved fingers. Length 10½".

The PIONEER Rubber Company

234 Tiffin Road • Willard, Ohio

STANZOIL

Quality Gloves for 35 Years

For more details circle NED-375 C4 on enclosed inquiry slip

Masonite Presdwood® can help you design better products easier. New booklet tells how and where to use these durable, grainless, all-wood panels. Describes, gives engineering data about the 44 types and thicknesses of this versatile hardboard material. Send for your free copy now!

PRESDWOOD WOOD MADE BETTER

NATURALLY STRONGER WITH LIGNIN

MASONITE®
CORPORATION
DEPT. NED-3, BOX 777, CHICAGO 90, ILL.
"Masonite" signifies that Masonite Corporation is the source of the product

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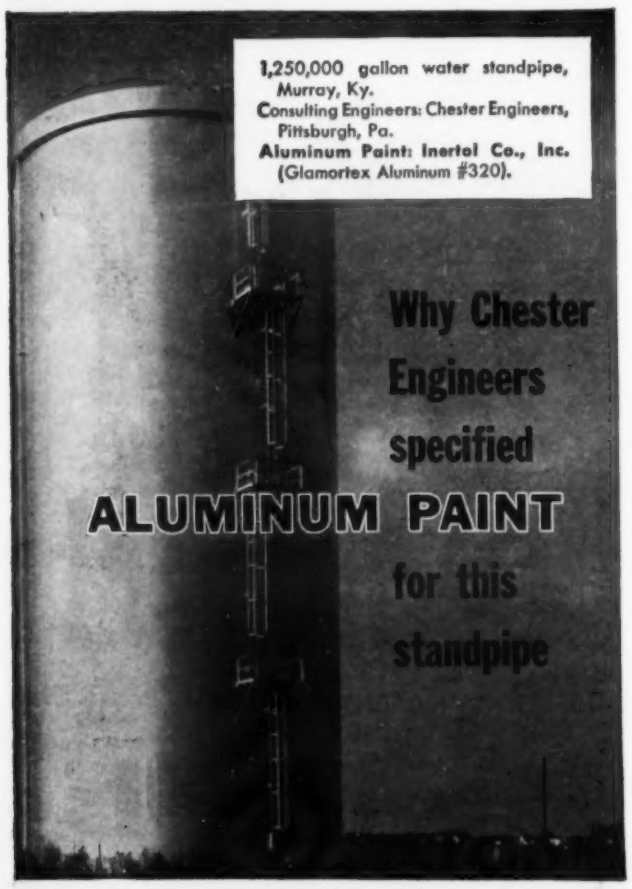

The Chester Engineers *specified* aluminum paint because they wanted a bright, durable, mar-resistant finish on all exterior surfaces and a paint that retains its high gloss. Only aluminum paint met these rigid requirements of durability and attractiveness.

Aluminum paint is first choice for protection and beauty throughout industry. It resists rust and corrosive smoke and fumes. It reflects up to 75% of heat and light rays, keeping buildings cooler in hot weather, brightening interiors of plants and warehouses.

We do not make paint, but Alcoa Aluminum Pigments are found in all of the best brands. If you're looking for top-notch protection for metal, masonry or wood, take a tip from the engineers. Specify aluminum paint. Write us today for full information.

ALCOA ALUMINUM

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Paint Service Bureau, Aluminum Company of America
1788-C Alcoa Building, Pittsburgh 19, Pa.
Please send me your FREE BOOKLET, *Painting with Aluminum.* I plan to paint_____
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MATERIALS HANDLING TRAYS combine polyester resins—Fiberglas

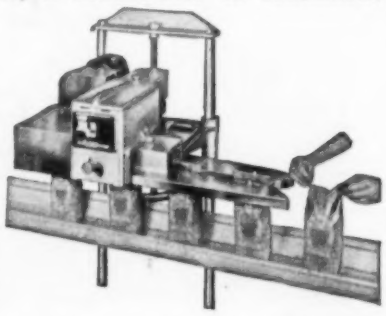
Bakelite polyester resins and Fiberglas are combined in the making of these molded trays used in chemical, pharmaceutical, baking and food handling industries.

Trays have flexural strength of 30,000 lb per sq in. and impact resistance of more than 15 ft lb. They are stable over temperature range from −60 to 300° F and will not dent, warp or rot. Resistance to acids, dilute alkalies and most other chemicals prevents harmful reactions between tray and contents. Smooth surface withstands daily loading, unloading, scrubbing, dehydrating, freezing and rough handling with little sign of wear. One model features corner lugs that lock a stack of trays together so they can be held at 45-degree angle without toppling. Made by **Molded Fiberglass Tray Co.,** Linesville, Pa.

▲ For more details circle NED-378 C4 on enclosed inquiry slip ▲

HEAT SEALER closes plastic bags at speeds up to 600 ipm

Plastic bags containing such items as industrial parts, hardware and chemicals can be closed by the model 4 Plasti-Sealer, a heat sealer of continuous rotary design. It will seal polyethylene, Pliofilm, vinyls and similar types of bag materials. Film of 1½ mil thickness can be sealed at speeds up to 600 ipm. Bags inserted in the wide easily-fed opening of the feed wing are gripped at the tops between two endless fabric rubber belts and conveyed through the rolls where the seal is made.



Welded seal is about ⅛-in. wide. Double rolls making two seals about ¼-in. apart can be furnished. Thin film of mold release fluid is wick fed on the heated roll to prevent the melted plastic film from sticking. Temperature is automatically controlled by an adjustable Robertshaw thermostat. Mounting can be on bench, table or adjustable floor base. Made by **Techtmann Industries,** Pack-Rite Machines Div., Dept. DN, 407 E. Michigan St., Milwaukee 1, Wis.

▲ For more details circle NED-379 C4 on enclosed inquiry slip ▲

Speed Up Material Handling

Here's a handy, mobile crane for lifting or loading jobs around your plant. Ideal for dismantling, moving or erecting machinery . . . loading and unloading structural iron, pipe, bars, lumber and equipment of all types. The UNIT 357 is self-propelled . . . rides on rubber at road travel speed . . . is easy to maneuver even in cramped yard conditions. Operated by ONE man . . . powered by ONE engine . . . swings in a 360° circle. Full vision cab gives complete visibility. Promotes Safety. Write for Catalog.

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6607 W. Burnham Street, Milwaukee 14, Wis., U. S. A.

UNIT
CRANES • CLAMSHELLS • MAGNETS

A 6021-1/9-A

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MERRILL MATERIALS HANDLING DEVICES

3-M-2

MERRILL BROTHERS
56-13 ARNOLD AVENUE MASPETH, N. Y.

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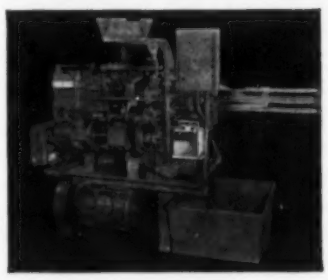
PULSOLATOR

The Automatic Lubricator that can be 400 places at once as often as 20 times a minute



Yes, Pulsolator can dependably lubricate as many as 400 bearings with a controlled quantity of oil, as frequently as 20 times a minute, through a single system with loop line up to 300 feet.

Here is your answer to reliable, automatic lubrication for machine tools, printing presses and similar equipment where the higher pressures of force feed systems are not essential. Pulsolator can save you money by eliminating oil waste and repairs and down time that come from lubrication failures resulting from human oversight or neglect.

Systems with various capacities and with both gravity and pressure feeds are adaptable to an endless variety of applications. Let experienced Manzel engineers show you how Pulsolator automatic lubrication can lower your costs and speed production efficiency. Write:

Manzel
DIVISION OF FRONTIER INDUSTRIES, INC.
302 BABCOCK STREET, BUFFALO 10, N.Y.

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Over 85% of the torque wrenches used in industry are

STURTEVANT TORQUE WRENCHES

Read by Sight, Sound or Feel

- Permanently Accurate
- Practically Indestructible
- Faster—Easier to use
- Automatic Release
- All Capacities

in inch ounces
...inch pounds
...foot pounds
(All sizes from 0-6000 ft. lbs.)

Every manufacturer, design and production man should have this valuable data. Sent upon request.

P.A. STURTEVANT CO.
ADDISON QUALITY ILLINOIS

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996-5

The extra care, metallurgy and precision in each I-R tool and accessory does make a difference. Write for new Bulletin 4126.

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11 Broadway, New York 4, N. Y.

ROCK DRILLS • AIR TOOLS • DIESEL AND GAS ENGINES
COMPRESSORS • CENTRIFUGAL PUMPS • VACUUM EQUIPMENT

For more details circle NED-384 C4 on enclosed inquiry slip

You can depend on Wiedeke quality

Guard holds Flare Roll Back—desirable for rolling Tubes closely spaced in thin Tube Sheets.

Package Boiler

. . . and Stationary Fire Tube Boiler Tubes can be rolled and flared in one operation with this Modern Parallel Rolling Tube Expander.

See your Dealer or Write us for Bulletin 3400.

THE GUSTAV WIEDEKE COMPANY
DAYTON 1, OHIO

For more details circle NED-385 C4 on enclosed inquiry slip

McGILL MANUFACTURING CO., INC. 151 N. CAMPBELL ST. VALPARAISO, INDIANA

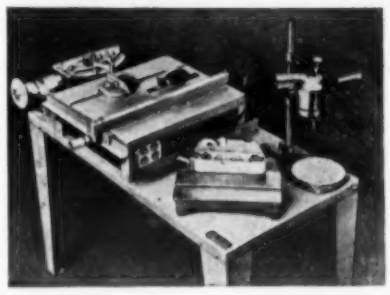
For more details circle NED-386 C4 on enclosed inquiry slip

GEAR CHECKING MACHINE
for large and small volume operations

Quick, accurate and low cost analytical comparison check on production gears is provided by this gear checking machine. Usable by both large and small volume gear producers, the Analytical Comparator provides a permanent, easy to read record which reveals all variations between a master gear and the production gear being checked. All essential gear checks are made: table motion parallel to gear axis checks the lead; perpendicular motion checks involute or tooth profile; and in-and-out motion of indicator slide checks spacing. Made by **Illinois Tool Works,** 2503 N. Keeler Ave., Chicago 39, Ill.

For more details circle NED-387 C4 on enclosed inquiry slip

PORTABLE WORKSHOP
bench mounts various portable tools which can be detached for use



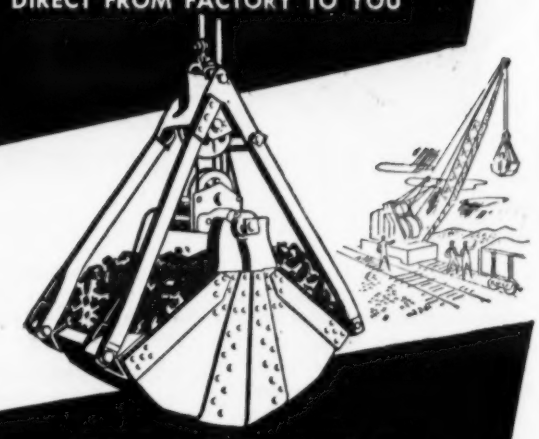
Utility of various independent portable power tools can be increased with the model 5013 Porta-Shop which can be equipped for sawing, sanding, grinding, drilling, shaping, polishing, buffing, jointing, grooving and other wood or metalworking operations. Addition of wheels to the 24 x 45-in. Multi-Tool steel work bench renders it mobile.

Higher section of bench accommodates any one of eight Porter-Cable electric hand saws to make a table saw with sliding miter gage, rip fence and bevel and depth adjustments. Vertical drill press, supporting a ¼-in. portable electric drill, is mounted at one corner of the bench. Stationary 2 x 21-in. abrasive belt horizontal bench sander can be used to sand, grind and polish.

Porter-Cable Combo-Tool for sanding, polishing or buffing wood or metals is also accommodated. Accessories include grinding wheels, abrasive cut-off blades, drum sanders, sanding disks and wire brush wheels. Shaper-jointer, equipped with a 20,000-rpm power unit, can be used to produce molded edges on wood, besides mortising, dovetailing and planing. Selection of 175 bits and cutters is available. Made by **Porter-Cable Machine Co.,** 31 Exchange St., Syracuse 8, N. Y.

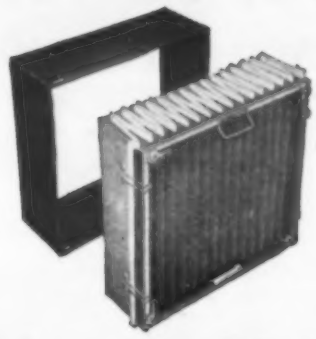
For more details circle NED-388 C4 on enclosed inquiry slip

BROWNHOIST BUILDS
BETTER BUCKETS
—for less money
DIRECT FROM FACTORY TO YOU



ROPE-REEVE, POWER WHEEL AND LINK TYPE
Write for illustrated catalogue
INDUSTRIAL BROWNHOIST CORPORATION
BAY CITY, MICHIGAN

For more details circle NED-389 C4 on enclosed inquiry slip



Airmat PL-24

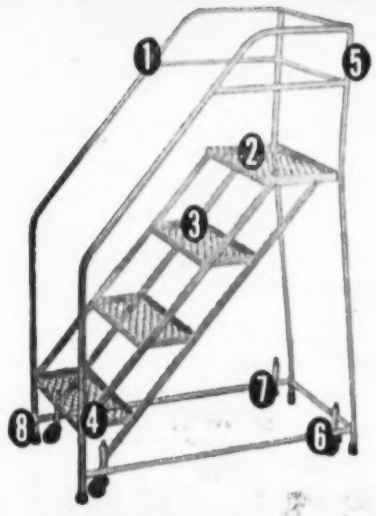
BETTER BUILT . . . FOR LONGER LIFE

Here's a filter that is really designed for hard usage and long, trouble-free life. The AIRMAT PL-24 is also built for easy maintenance. The precision-made components fit without binding—and separate easily for changing media. There are more than a quarter million AIRMAT PL-24 units now in service—evidence of real dependability! The PL-24 provides a maximum filtering area (7 to 1 ratio) with *positive* sealing against air leakage. Please write for Bulletin No. 230E.

American Air Filter COMPANY, INC.
391 Central Avenue, Louisville 8, Kentucky
American Air Filter of Canada, Ltd., Montreal, P. Q.

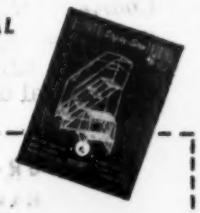
For more details circle NED-390 C4 on enclosed inquiry slip

ONLY BALLYMORE Safety Step LADDERS GIVE YOU ALL THESE ADVANTAGES!



1. **GUARD RAILS** . . . Users feel safe up on Ballymore Ladders, surrounded by sturdy guard rails which *really* support and protect.
2. **SAFETY TREAD** . . . Special non-skid design provides sure footing all the way.
3. **SELF-CLEANING** . . . Treads can't clog with dirt, grease, or liquids.
4. **LIFETIME WEAR** . . . All welded-steel heavy-duty construction; no rivets or bolts, nothing to loosen or wear out.
5. **STRENGTH OF STEEL** . . . Tubular cross-section assures high strength with light weight.
6. **AUTOMATIC ACTION** . . . Just step on a Ballymore and it locks to the floor. No levers to pull, no wing nuts, no locks. Nothing to handle or think about. Acts for you.
7. **EASY PORTABILITY** . . . when you step off, ladder rolls easily on four large-diameter casters.
8. **MAXIMUM STABILITY** . . . Rubber-tipped feet at extremities of ladder eliminate any tendency to wobble, roll, or "kick out".
9. **COMPLETE RANGE OF SIZES FROM ONE TO THREE STEP WITHOUT GUARD RAILS; TWO TO EIGHT STEPS WITH GUARD RAILS.**

INSIST ON ORIGINAL
Safety Step LADDERS



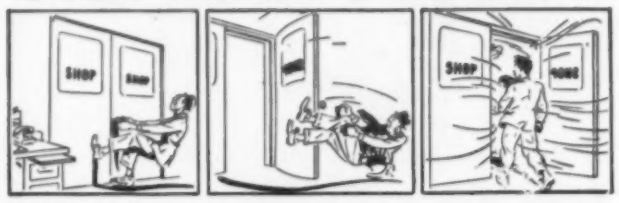
Send for FREE Catalog
BALLYMORE COMPANY
WAYNE 3, PA.

Please send me my copy of full illustrated Ballymore Catalog showing complete line of original BALLYMORE ladders.

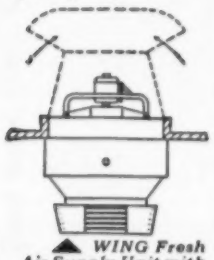
NAME_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE____ STATE_____

For more details circle NED-391 C4 on enclosed inquiry slip

Is Your Factory Starved for AIR?



If this is what happens when you go from the office into the shop, your plant is *starved for air!* Vacuum from exhaust equipment is usually responsible. While our pictures may be slightly overdrawn, something like that may be happening in your plant.



▲ *WING Fresh Air Supply Unit with fan above roof line.*

If your building is not new, the vacuum may be relieved by crevices, windows, and loose-fitting doors admitting much unheated air, rendering your heating system entirely inadequate. If the building is air-tight, the ventilating system won't work properly, unless make-up air equally replaces exhaust air.

Here's an easy solution. Install WING FRESH AIR SUPPLY HEATERS with Revolving Discharge Outlets. In winter they bring in fresh air with controlled temperatures, replacing exhausted air. In summer, with the steam shut off, fresh air is circulated, keeping workers cooled and production up to par in stifling weather.

L. J. Wing Mfg. Co. 165 Vreeland Mills Rd., Linden, N. J.

▲ For more details circle **NED-392 C4** on enclosed inquiry slip ▲

Nothing You Build Into Your Product *Can Count for More!*

Everyone Can Count on VEEDER ROOT

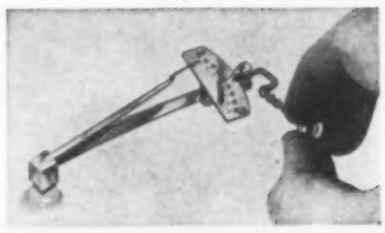
This compact Reset Counter is a standard built-in part of many makes of business machines, cameras, coin machines, compressors, die casting machines, hay balers, laundry equipment, plastic molding machines, punch presses, shoe machines . . . and what have *you?* It counts turns, strokes, pieces or other units of performance and output . . . supplying facts-in-figures that help toward closer *Count*rol. Find out how *your* product can give your customers a *new usefulness*, with these or other Veeder-Root Counters for mechanical or electrical operation. Write:

VEEDER-ROOT INCORPORATED
HARTFORD 2, CONNECTICUT
Chicago 6, Ill. • New York 19, N. Y. • Greenville, S. C.
Montreal 2, Canada • Dundee, Scotland
Offices and Agents in Principal Cities

"The Name that Counts"

▲ For more details circle **NED-393 C4** on enclosed inquiry slip ▲

MIDGET TORQUE WRENCH
has 0 to 80 gram-inch range



Electronics, instrument and precision equipment fields can make use of the model F80-I-G standard torque wrench which has a 0 to 80 gram-inch range. Pivoted handle makes it possible for the operator to concentrate the load position. Widely spaced increment markings on the scale are in steps of 5 gram-inches. Other models are available in the same style in ranges from 0 to 8 and 0 16 oz-in. Made by **P. A. Sturtevant Co.,** 333 W. First Ave., Elmhurst, Ill.

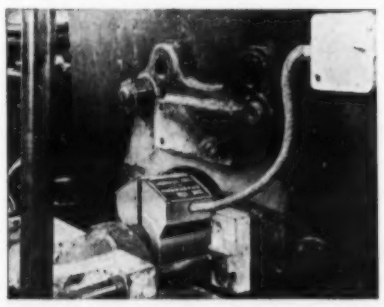
▲ For more details circle **NED-394 C4** on enclosed inquiry slip ▲

MAGNETIC CONTACTOR
rated up to 5 hp at 208-550 v

Small size, light weight, easy access to coils and contacts as well as simplicity of construction are characteristics of the Little Giant magnetic contactor furnished in 2, 3 or 4 poles. Wide contact gap of 21/64-in. is advantageous in reversing contactors to avoid flashover during rapid reverses. Units are currently incorporated in air conditioning and heating units, hoists, door openers, packaging and baling machines, mobile cranes and ovens. Made by **Furnas Electric Co.,** 1009 McKee St., Batavia, Ill.

▲ For more details circle **NED-395 C4** on enclosed inquiry slip ▲

DIE CASTING NOZZLE HEATER
built to dimensions of nozzle



Close temperature control is provided by Thermaband electric heater for die casting nozzles. Heater is built to exact physical dimensions of the nozzle, and correct thermal loads are governed by total pound per hour of output desired. Advantages of installation include elimination of freezing of die casting material in nozzle at end of casting cycle, elimination of uncontrolled nozzle warping and reduction of tendency of nozzle heater to over-heat the die. Made by **Thermel, Inc.,** 3444 W. Lake St., Chicago 24, Ill.

▲ For more details circle **NED-396 C4** on enclosed inquiry slip ▲

Test for Electrical
LEAKAGE • SHORTS • BREAKDOWN
with
"HYPOT" JUNIORS

HIGH POTENTIAL TESTING INSTRUMENTS

WRITE FOR BULLETIN 4A

- **ONLY ONE** instrument necessary to make high potential tests for leakage, breakdown or shorts!
- **PORTABLE,** with rugged steel case...Operates in any position!
- **SAFE** to use, with protected test leads, shielded high voltage, grounded case!
- **SIMPLE**—only three easy steps to make a complete test!
- **VISUAL INDICATIONS** from neon lights give positive test results. Audible test indication for leakage also available.
- **RANGES** 0-1500 to 0-6000 V.A.C. output. Other "Hypots" to 50,000 V.A.C. output at 5 K.W.
- **WRITE** for complete data on "HYPOTS" for your jobs.

ASSOCIATED RESEARCH, *Incorporated*
3786 West Belmont Avenue, Chicago 18, Illinois

▲ For more details circle **NED-397 C4** on enclosed inquiry slip ▲

S-W Belt Saver Pulleys

SINCE 1866

. . . Protect Expensive Belts

For rough service installations . . . for the handling of hard, abrasive materials—always specify the S-W 'BELT-SAVER'.

Its special wing and cone design and its self-cleaning action assure longer belt-life and reduced maintenance costs.

The 'BELT-SAVER' pulley is exclusive with Sprout-Waldron, along with a complete line of standard and special cast iron pulleys.

Write for Bulletin 35-A today! Sprout-Waldron & Co., 8 Logan St., Muncy, Pa.

Vertical Mixers, Attrition Mills, Rotary Feeders, Ribbon Type Mixers, Crushers, Knife Cutters, Continuous Mixers, Roller Mills, Separators, Pulleys

198

SPROUT-WALDRON

▲ For more details circle **NED-398 C4** on enclosed inquiry slip ▲

✓ SAVE UP TO 40% SPACE!
✓ EXTRA HIGH SAFETY FACTOR!
✓ DEPENDABILITY . . . backed by 38 Years of Know-How!

Off shelf delivery all styles to 3" bore in increments of 1" to 12" stroke.

NEW T-J

Spacemaker AIR CYLINDERS

Streamlined design of the new T-J Spacemaker *eliminates tie rods . . . saves up to 40% in mounting space!* It's performance-proved . . . *super rugged* with extra high safety factor . . . solid steel heads . . . heavy wall, precision honed, *hard chrome plated,* seamless steel body . . . leakproof cylinder head to body construction . . . heavy duty, hi-tensile, *hard chrome plated* piston rod.

Available with the new T-J Super Cushion Flexible Seals which insure positive cushion with automatic valve action for fast return stroke. Many standard sizes and styles . . . for pushing, pulling, lifting, clamping or control jobs. T-J dependability. Write for bulletin 454. The Tomkins-Johnson Co., Jackson, Mich.

T-J **TOMKINS-JOHNSON**

▲ For more details circle **NED-399 C4** on enclosed inquiry slip ▲

REDUCE COSTS ON "SMALL-WORK" GRINDING & FINISHING JOBS with

Foredom FLEXIBLE SHAFT MACHINES

- FEATHER-WEIGHT, finger-tip-controlled handpiece (pencil size or larger) which eliminates operator fatigue.
- CHOICE OF 5 HANDPIECE TYPES (all instantly interchangeable). You fit the handpiece to the job at hand.
- EXTRA GOOD FLEXING QUALITIES in the flexible shaft assembly for effortless maneuverability.
- LONGER MOTOR LIFE because motor is not dwarfed to fit the hand.
- HIGH SPEED (14000 RPM) which does not drop precipitately under load.
- SILENCER-EQUIPPED flexible shaft for vibration-free performance.

Over 100,000 Foredoms Now In Use!

BENCH OR HANG UP MODELS FOR HEAVY OR LIGHT DUTY

Also flexible-shaft tools attachable to your own drill press or motor

Use Foredoms to GRIND, POLISH, DRILL, ROUT, CARVE, MILL, SAW, SLOT, CLEAN, SAND, ETCH, ENGRAVE, etc., etc.

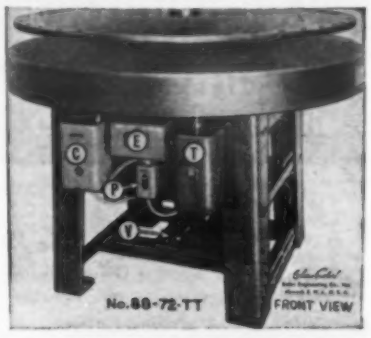
Write for Catalog 5267

FOREDOM Electric Co., Dept. 5267 27 Park Place, N.Y. 7, N.Y.

▲ For more details circle **NED-400 C4** on enclosed inquiry slip ▲

TURNTABLES AND POSITIONERS over 100 different types for welding, brazing, soldering, spraying, glass insulator melting and glass glazing, with rotating stations and indexing with barrel cam or geneva gear action. For work transferring, tilting positions, motorized or hand operated. Rotating tables of all kinds for over 33 years. Many types made by EISLER. We supply any part or complete equipment and we make special turntables to your order. Write for catalog.

Eisler Indexing Turntables are Completely Electrically Controlled.



CAMS
MADE TO YOUR SPECS.

DR. CHARLES EISLER, M. E., PRES.
EISLER ENGINEERING CO. INC., 740 S. 13TH ST., NEWARK 3, N. J.

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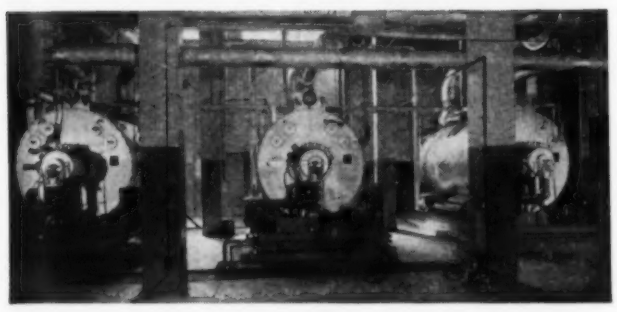
Steam Costs Go DOWN where *Powermasters* Go In



For Example:

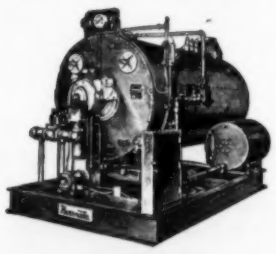
A new 535-unit apartment house in Atlanta, Georgia, gets winter heat, summer air-conditioning, and year-round hot water services at average fuel cost of only $1.15 per month per apartment with three *Powermaster* Packaged Automatic Boilers! Low-cost space-saving installation, smokeless combustion, completely automatic operating and safety controls, cost-saving maintenance, trouble-free performance, and a hospital-clean boiler room are other advantages gained.

Have You Checked Your Steam Costs Lately?

Many kinds of industrial plants, food processors, schools, institutions, public buildings, laundries, housing projects, and utilities are also enjoying the cost-saving advantages of *Powermaster* boilers.

Send for New Bulletin

describing and illustrating all cost-saving advantages of *Powermaster* units.



O&S *Powermaster*®

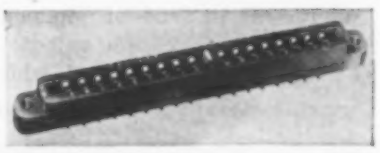
PACKAGED AUTOMATIC BOILERS

Sizes to 500 HP; pressures to 250 psi.

Orr & Sembower, Inc.
Morgantown Road, Reading, Pa.

▲ For more details circle **NED-402 C4** on enclosed inquiry slip ▲

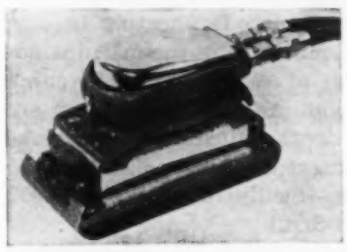
CONNECTOR RECEPTACLES for use with printed circuits



Printed circuit boards from 0.061 to 0.071-in. can be accommodated by line of printed circuit connector receptacles. Solid one-piece contacts mounted in alkyd or melamine plastic maintain smooth wiping contact after 1000 insertions on the 0.071-in. boards. Ample allowances have been made for misalignment of mating boards. Connector is available in 18 and 22-contact configurations. Made by **Richardson Co.,** Dept. S. R. 10, 5860 Spring Oak Dr., Hollywood 28, Calif.

▲ For more details circle **NED-403 C4** on enclosed inquiry slip ▲

ORBITAL AIR SANDER speed up to 6000 cycles/minute



Operating speed of up to 6000 cycles per minute makes this orbital-type air sander practical for rough sanding and preliminary operations. Compact unit weighs only 4½ lb, is counterbalanced to minimize vibration and reduce fatigue. It has built-in water attachment for wet sanding. Air consumption is low, requiring only 5½ to 7 cu ft per minute. Pad control eliminates side sway, making it possible for sander to be used next to edges, moldings and in tight corners without damaging work. Palm lever on top of unit controls both air and water by slight downward pressure. Quick-change pad clips and antifriction bearings are other features. Made by **Sundstrand Machine Tool Co.,** Pneumatic Div., 2574 Eleventh St., Rockford, Ill.

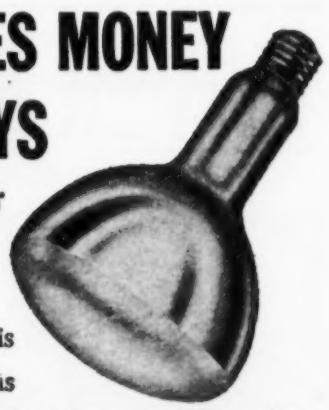
▲ For more details circle **NED-404 C4** on enclosed inquiry slip ▲

OVERSHOE RACK also holds umbrellas

Eight openings for umbrellas and three shelves for storage of nine pairs of overshoes or rubbers are contained in the Stormrak. Built of heavy gage welded steel, it is finished in baked gray enamel and is designed to fit the decor of any office. Removable pans accumulate the drippings from umbrellas. Made by **Vogel-Peterson Co.,** Dept. P-8, 1127 W. 37th St., Chicago 9, Ill.

▲ For more details circle **NED-405 C4** on enclosed inquiry slip ▲

NEW...SAVES MONEY IN HIGH BAYS



Amplex R-57 lamp never needs cleaning despite smoke and dust

AMPLEX R-57 LAMP is designed for continuous maximum light output in high bays. Its unique shape and *pure silver,* sealed-in reflector abolish all need for cleaning and for auxiliary reflectors... grime and dust never obscure the under surface from which light is projected. Available in 500 and 750 wattages. Save money! Write for full facts. **Amplex Corporation, Dept. H-3 111 Water St., Brooklyn 1, N. Y.**

AMPLEX

Incandescent, Fluorescent, Sealed-Beamed Reflector, Infra-Red, Rough Service, Mercury Vapor, Photoflash, Street Lighting and Traffic Signal Lamps, Swivelites, Hi-Hats and Display Lighting Accessories.

▲ For more details circle **NED-406 C4** on enclosed inquiry slip ▲

how to SOLVE your LOW-CAPACITY FLOW CONTROL problems

BULLETIN 1053

Here's a new and improved bulletin on Air-Powered Controlled Volume Pumps ... your guide to precise flow rate control of low-capacity chemical and slurry streams.

It's fact-filled ... gives you operating principles, tables, applications, features and designs, examples of complete Milton Roy engineered chemical feed systems.

Solve your low-capacity flow control problems. Send for your free copy of Bulletin 1053, now.

MILTON Roy COMPANY
1304 E. MERMAID LANE
PHILA. 18, PA.

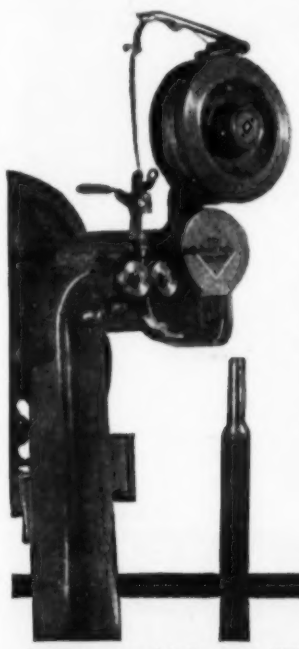
CONTROLLED VOLUME PUMPS ARE FLOW CONTROL INSTRUMENTS

▲ For more details circle **NED-407 C4** on enclosed inquiry slip ▲

Add an Acme Steel 25-pound coil holder

to your present wire stitching equipment

Stitch 2½ times longer without stopping



The rugged new Acme Steel 25-pound coil holder means less down time on your wire stitching operations, both because it holds 2½ times as much wire as the conventional 10-pound coil holder, and because it's easier and faster to load. Features are tangle-free wire feed and positive shoe-type brake. For details, write Acme Steel Products Division, Dept. NED-34, Acme Steel Company, 2840 Archer Avenue, Chicago 8, Illinois.

STITCH IT... STRAP IT... SHIP IT... SAFELY!

ACME STEEL

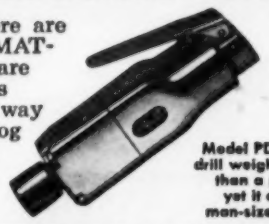
▲ For more details circle **NED-408 C4** on enclosed inquiry slip ▲

INCREASE PRODUCTION—CUT COSTS with

A variety of pneumatic tools to provide effortless power for hundreds of production line and maintenance jobs.

Mall **featherweight PNEUMATIC TOOLS**

Industrial plants everywhere are switching to MALL PNEUMATIC TOOLS and the results are fantastic. Production zooms overnight and costs are cut way down. Send for the free catalog that gives you all the facts showing how the many different MALL pneumatic tools will help YOU.



Model PD-103L drill weighs less than a pound yet it does a man-sized job.

40 Factory-Owned Service Warehouses, Coast to Coast, To Give You Fast, Dependable Service.

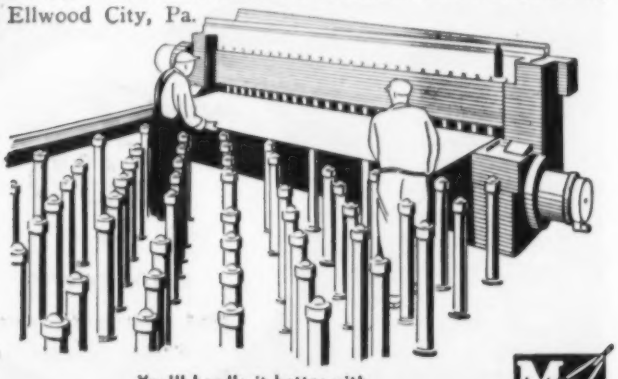
MALL TOOL COMPANY 7727 S. Chicago Avenue, Chicago 19, Illinois
Send me the MALL Pneumatic Tool Catalog.
*Name*_____ *Company*_____
*Address*_____
MU-90

▲ For more details circle **NED-409 C4** on enclosed inquiry slip ▲

Mathews Ball Transfers Handle Plates with Amazing Versatility

Ellwood City, Pa.—Latest reports verify the fine performance of Mathews Ball Transfers in handling steel plates and similar materials that have smooth conveying surfaces. Fabricators using shears and punches say that ball transfers can't be beat for manipulating this heavy material around their machines. Plates move in any direction into position with a minimum of effort.

Mathews Ball Transfers are all of the same basic design . . . a large hardened steel ball which turns on a bed of smaller balls in a self-cleaning, cup-shaped steel base. Complete line ranges from a capacity of 50 lbs. to 1000 lbs. Call your Mathews representative, or send for Bulletin BT-52. Write: MATHEWS CONVEYER COMPANY, Ellwood City, Pa.



You'll handle it better with

MATHEWS CONVEYERS

▲ For more details circle NED-410 C4 on enclosed inquiry slip ▲

WE'LL SEND YOU THIS WHOLESALE CATALOG FREE!

Save Money

OVER 9,000 ITEMS INCLUDING

THE HARRY ALTER CO.
1726 S. MICHIGAN AVE., CHICAGO 16
132 LAFAYETTE ST., NEW YORK 13

▲ For more details circle NED-411 C4 on enclosed inquiry slip ▲

Over 31 Grades of Synthane Plastics

There are more than 31 standard grades of Synthane laminated sheets; and a number of tube and rod grades. Each grade has many properties in combination which are unavailable in non-plastic materials. See our catalog. The coupon will bring it to you.

SYNTHANE SYNTHANE CORPORATION
N. E. RIVER ROAD, OAKS, PENNSYLVANIA

Manufacturers of Laminated Plastics

Please send me a copy of the Synthane catalog.

Name_____

Address_____

City_____ (zone)_____ State_____

▲ For more details circle NED-412 C4 on enclosed inquiry slip ▲

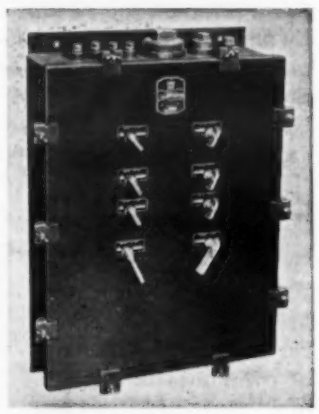
TOOL BOARD
holds 56 drills and reamers

An efficient method of replacing tools on transfer-type and other multiple spindle machines is provided by this special tool board which, in illustration, is

holding 56 newly sharpened drills and reamers. Each tool is graphically identified as to size, station, tool number and adapter size. An important part of overall method is standard presetting gages, which speed accurate setting of tools. Duplicating holding method of machine, they minimize in-the-machine adjustments and machining of sample parts to check accuracy of depth settings. Adjustable adapters are used to permit accurate depth adjustments and make it easy for operator to insert or eject tools from machine spindles. Made by **Scully-Jones & Co.**, 1952 S. Rockwell St., Chicago 8, Ill.

▲ For more details circle NED-413 C4 on enclosed inquiry slip ▲

PANELBOARDS
for lighting and distribution are sealed against combustible dusts



Line of circuit breaker lighting and distribution panelboards is designed for use in hazardous locations where combustible dusts are present. Enclosure consists of formed steel box and front with welded corners. External, dust-tight handle mechanisms operate branch circuit breakers. Heavy Garlock packing provided between flanges of box and the front is arranged to seal the opening with help of heavy swing bolts and clamps. Conduit hubs for main and branch circuit cables are seam-welded to top or bottom of enclosure as desired.

All panelboards incorporate thermal-magnetic, quick-make, quick-break circuit breakers for alternating and direct current service. Branch circuit breakers are provided in ratings from 15 to 50 amp, single pole, and 15 to 100 amp, 2 and 3-pole. Units meet National Electric Code and UL code for Class II, Groups E, F and G hazardous locations. Made by **Square D Co.**, 6060 Rivard St., Detroit 11, Mich.

▲ For more details circle NED-414 C4 on enclosed inquiry slip ▲

GENUINE — SIMPLE

SILVER PLATING

"ON THE JOB" WITH POWDER

Purposes of silver plating need not be explained to you of the electrical field.

The biggest problems of silver plating are its convenience, economy and thoroughness. "Cool-Amp" silver plating POWDER is the answer to these problems.

"Cool-Amp" deposits a genuine coat of silver that will not peel off and provides cool maximum conductivity for copper, brass or bronze contacts. It has been proven equal to any electroplating for bolted and stationary contacts and is far more adaptable . . . always ready for use.

"Cool-Amp" POWDER offers a quick and easy solution to heating due to oxidation, improves the continuity of electrical service and reduces maintenance.

"Cool-Amp" is completely harmless to the user and is simple to apply. It can be used by any number of people at the same time. ON THE JOB, in underground vaults and sub stations and in hard-to-get-at places. The only equipment needed is a sharp steel wire brush or abrasive cloth, clean rag and water.

Dampen a rag, dip in "Cool-Amp" and rub on surface. One pound will silver plate approximately 6000 square inches.

$13.50 PER POUND SHIPPED PRE-PAID

WRITE FOR FREE SAMPLE AND QUANTITY QUOTATIONS

GENUINE • SIMPLE SILVER PLATING

COOL-AMP

Dept. ED 8603 S. W. 17th Avenue • Portland 19, Oregon

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How to solve 39 PRODUCTION PROBLEMS with Mead Air Devices

Ready!

SEE how to use standard Mead units to make automatic or semi-automatic machines!

New 16-page Mead PHOTO-BOOKLET presents actual examples in pictures and text of 39 different, typical production problems solved by various combinations of Mead Air Operated Devices. Alert production men will readily adapt the ideas to their own needs. This interesting booklet shows how. Write today for booklet "Air Power at Work".

Write for NEW "BOOKLET 39" *Now!*

MEAD SPECIALTIES CO., Dept. NA-34, 4114 N. Knox Ave., Chicago 41, Ill.

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SUCTIONEERED!

HOW TO CLEAN floors, walls, machinery, overhead beams and pipes, ceilings, venetian blinds, boilers, etc. *faster, better,* at *lower cost* is a major maintenance problem. A Clarke "Suctioneered" vacuum cleaner is the answer.

WHAT IS "SUCTIONEERED"? The Clarke vacuum cleaner is skillfully engineered and built for powerful suction, years of heavy-duty service; yanks dirt, dust, metal chips, other solids from all surfaces, picks up water, oil and other fluids, reduces physical effort.

WHY CLARKE is the choice of cost-conscious management should be a major factor in *your* selection of a Clarke vacuum cleaner. The complete Clarke line assures you the *right model* for your *cleaning* job.

NOW IS THE TIME to learn the complete Clarke story — before *you buy any vacuum cleaner.* Write for FREE literature on Clarke vacuums and floor maintainer line. Better yet, ask for an on-the-job demonstration.

Authorized Sales Representatives and Service Branches in All Principal Cities

Clarke

SANDING MACHINE COMPANY
223 East Clay Avenue Muskegon, Michigan

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Drill More Holes Per Hour
In ANY Pattern . . . On ANY Drill Press

with a *Adjustable* **MULTI-DRILL**

DRILLS 2 to 8 HOLES at ONE STROKE

Increase production up to 800% . . . save time, cut costs. MULTI-DRILLS make *any* drill press produce *more*. Attached without alterations or special tools. Quick, easy setups of universally adjustable spindles give you more flexibility . . . wider application. Handles any hole pattern within 9" circle; centers close as ½". Extension Spindles available to increase working area to 22½". Special adaptations available.

model 900

DRILLS ANY HOLE PATTERN

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COMMANDER MFG. CO.
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Product of *Commander* . . . Builder of Production Tools

▲ For more details circle NED-418 C4 on enclosed inquiry slip ▲

this book shows you how to Reduce machine noise and vibration 60-85%.
Avoid floor drilling by mounting machines the modern way, without bolts or lag screws.
Reduce maintenance costs by eliminating transmitted vibration which damages machines, floors and buildings.
Save time and money when installing new machinery or repositioning present machinery.

Write today for your free copy of "Why It Pays To Anchor Your Machines With UNISORB."

THE FELTERS COMPANY
224 South Street, Boston 11, Massachusetts

UNISORB® MOUNTINGS are used with our special adhesive. UNISORB is also available precoated with adhesive, for use with machines that do not require shimming.

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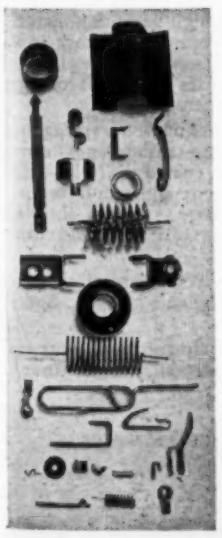
WIRE FORMS
& *Metal Stampings*



High-speed, quality production with custom-made precision. Wire formed to any shape for every need.

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Perfect straight lengths to 12 ft.
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SMALL METAL STAMPINGS
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Specializing in Production of Parts for Electronic, Cathode Ray Tubes and Transistors

Write for illustrated folder. Send Blueprints or Samples for Estimate.

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NEWARK 2, N. J.

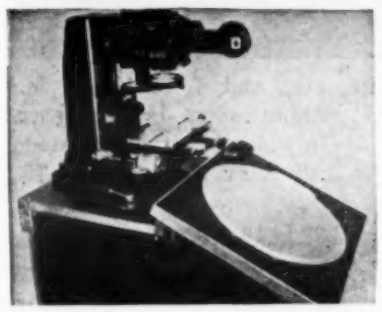
▲ For more details circle NED-420 C4 on enclosed inquiry slip ▲

OIL RECOVERY UNIT
automatic, avoids water pollution

Electrically controlled and operated, Kleer-Stream automatic oil recovery unit is designed to recover reusable oil and assist in reducing stream and lake pollution. It is for use with parts washers, coolant pumps and reservoirs handling liquids which contain oil. It is fitted with a storage tank for separated oil which is manually drawn off when full, and automatically returns recovered liquids such as washing solutions to process machinery. Although designed for oil recovery, unit can also be used for separation of other types of liquids which have different specific gravities and other characteristics causing them to remain in suspension when mixed. It is approximately 5 ft high, with hinged access doors provided for inspection and maintenance. Made by **Detroit Harvester Co.**, Pioneer Pump Div. 2751 Guardian Bldg., Detroit 26, Mich.

▲ For more details circle NED-421 C4 on enclosed inquiry slip ▲

OPTICAL COMPARATOR
magnifications of 10, 20, 25, 31¼, 40, 50, 62½ and 100X are standard



Multi-Phase optical system which projects upright properly oriented image with exceptional definition and screen brightness is feature of model R-300 optical comparator. System also offers long focal lengths at every magnification, providing large working space clearance between lenses and object stage platform. Available lens mounting capstan makes possible instant change from one magnification to another. Lenses of 10, 20, 25, 31¼, 40, 50, 62½ and 100X are obtainable.

Either plain platform or universal coordinate measuring stage can be used with comparator. Both are extra large size, rigid for precise object location and provide for helix angle settings. High-powered light source is variable, blower cooled and provides uniform illumination over 16-in. diameter screen which does not require hoods or visors under any lighting condition. Accessories include spring plunger V-type center stage, graduated rotary screen with vernier scale and Dual-Lens high intensity surface illuminator. Made by **Portman Instrument Co.**, Town Dock Rd., New Rochelle, N. Y.

▲ For more details circle NED-422 C4 on enclosed inquiry slip ▲

Partners . . . . YOU AND YOUR
NO. 50 POCKET PAL

$1.00 AT YOUR LOCAL DEALER
CATALOGUE NO. 49 AVAILABLE UPON REQUEST

.030 MATTE FINISH MATHEMATICAL QUALITY DOUBLE-CURED PLASTIC. ALL HOLES SMOOTH-MILLED TO ENGRAVING MACHINE ACCURACY.

ONE OF MORE THAN 30 RAPIDESIGN TIME-SAVER TEMPLATES — ALL OF WHICH ARE BETTER MADE, MORE USEFUL AND LESSER PRICED.

RAPIDESIGN INC.
P. O. BOX 592 GLENDALE, CALIF.

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"All motors are NOT alike!"

Here are FACTS to help you select the BEST A-c. Motor

CUTAWAY DRAWINGS
CONSTRUCTION FEATURES
SELECTION DATA
PRICES
ORDERING HELPS
DIMENSIONS
Write for Bulletin B-2101

RELIANCE ELECTRIC AND ENGINEERING CO.
1082 IVANHOE ROAD • CLEVELAND 10, OHIO

Sales Representatives in Principal Cities

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"SPOT the Light where you want it... LIGHT the Spot where you need it."

SWIVELIER *Adjustable*
COOLITES
Reg. U.S. Pat. Off.

PREVENT BURNS

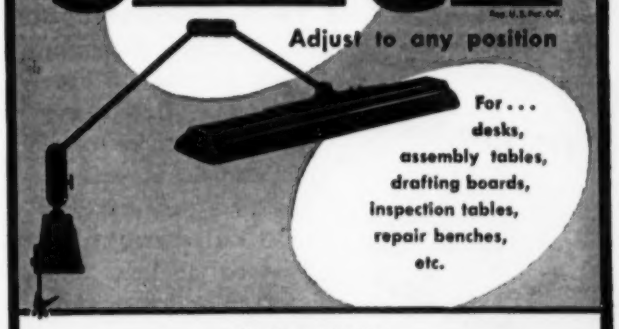
STAY COOL
Using 100-Watt Lamp

LOCKED-IN SPRING-TENSION PREVENTS DROPPING DOWN OR WORKING LOOSE.

"Never gets too hot to handle"

SWIVELIER FLUORESCENT
DEXTRA-LITES
Reg. U.S. Pat. Off.

Adjust to any position



For . . . desks, assembly tables, drafting boards, inspection tables, repair benches, etc.

Made with the
UNIQUE, SPRING-TENSION SWIVELIER SOCKET

UNIVERSALLY ADJUSTABLE
ANGLES 90° ROTATES 360°

"STAYS PUT . . . AT ANY ANGLE!"

• ALL WIRES ENCLOSED

• For full details on Coolites, fluorescent and incandescent "Dextro-Lites" and other fine Swivelier Industrial Lighting Units
Write: Dept. NE-3 for Bulletin 134.

TRADEMARK

SWIVELIER COMPANY, Inc.
43—34th St., Brooklyn 32, N. Y.
Showroom: 30 Irving Place, New York 3, N. Y.

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MR. PRODUCTION FOREMAN:

YOU, TOO, WILL BE ASKED THIS QUESTION SOONER OR LATER, BETTER CHECK UP BEFORE IT'S TOO LATE!
WE'LL SEND YOU COMPLETE INFORMATION AND PRICES VIA RETURN AIR MAIL!
Phone, wire or write us RIGHT NOW!

Severance TOOL INDUSTRIES INC.
761 Iowa Ave., Saginaw, Michigan

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Now time your jobs
AUTOMATICALLY with CALCULAGRAPH!

PRINTS ACCURATE OPERATIONS DATA

Photo courtesy of F. Jacobson & Son Albany, New York

Prints date..
starting time..
finishing time..
— and total elapsed time!

Save time and eliminate clerical errors with Calculagraph accurate-to-the-minute, printed job time records. Use these data cards for computing costs, estimating on reorders. One Calculagraph can record job time data for an entire shop or department.

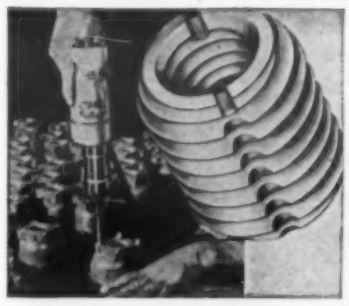
NEW!
AUTOMATIC DATER!
Standard on all electric models. Automatically changes date — eliminates incorrect dating of records.

ASK FOR COMPLETE INFORMATION, TODAY
Illustrated literature and sample job cards will be sent promptly on request. Just call or write Dept. 302

CALCULAGRAPH COMPANY
Sussex St., Harrison, New Jersey
STANDARD OF ACCURACY SINCE 1892

▲ For more details circle NED-427 C4 on enclosed inquiry slip ▲

THREADED INSERT
now slotted for screwdriver use



Improved Weg threaded inserts which provide anchor for bolting metal to metal, wood and plastic are now slotted for screwdriver installation in sizes up to ¼-in. Larger sizes are installed with insert driver. Inserts are specially practical where frequent installation and removal would damage original threads in the material. In salvaging damaged parts, inserts eliminate necessity for oversized studs or bolts. They are offered in complete range of sizes, in steel and corrosion-resistant alloy. Made by **Roylyn, Inc.**, 1706 Standard Ave., Glendale 1, Calif.

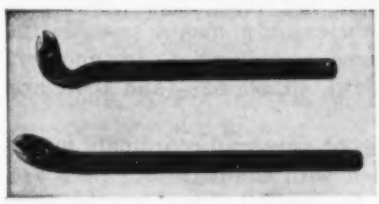
▲ For more details circle NED-428 C4 on enclosed inquiry slip ▲

ROLLER CONVEYOR FRAMES
prepunched to vary roller spacing

Variable spacing of rollers to suit changes in product or container shapes is made possible by these prepunched roller conveyor frames. Multiple spacing on various hole centers, such as 3, 6, 9, 12 in., etc., and 4, 8, 12, 20 in., etc., can be furnished without extra charge when specified. Feature results in wider adaptability. Made by **Sage Equipment Co.**, 28 Essex St., Buffalo 13, N. Y.

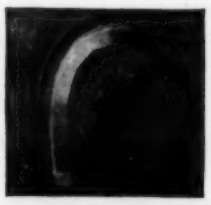
▲ For more details circle NED-429 C4 on enclosed inquiry slip ▲

NAIL PULLERS
grip up to 20-penny size



Head of Cat's Paw nail puller is spoon-shaped and slides easily under nail-head for easy drawing of even rusty nails up to 20-penny size without damage or splintering. Tool is made of ⅝-in. hexagonal tempered Drewmalloy steel heat treated for toughness and strength, especially at tip. Companion tool, identical in size, has less pronounced curve at head for normal nail pulling work. Pullers are 10½ in. long and are made in three sizes and shapes. A 16-in. tool with chisel or prying blade on one end is also available for heavier work. Made by **C. Drew & Co.**, Dept. A-4, Kingston, Mass.

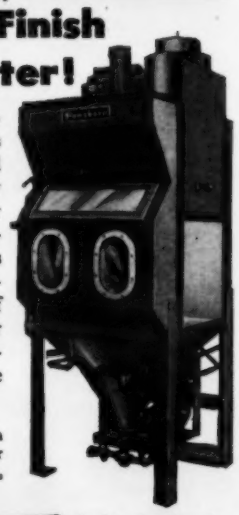
▲ For more details circle NED-430 C4 on enclosed inquiry slip ▲



BEFORE
Mold cleaned and finished by Pangborn Hydro-Finish in minutes!

AFTER

Pangborn Hydro-Finish cleans better—faster!



Molds, dies, tools—Pangborn Hydro-Finish cleans them quickly, leaves them bright and ready to use! Hand cleaning and polishing is practically eliminated! And production is further speeded up because Pangborn Hydro-Finish, operated by one man, removes scale and discoloration in minutes instead of hours. In addition, the use of fine mesh abrasives suspended in water gives you a precision job . . . holds tolerances to .0001" . . . protects delicate equipment.

GET COMPLETE FACTS on Hydro-Finish and how it can save *you* money! Write for Bulletin 1400A to: PANGBORN CORPORATION, 2400 Pangborn Blvd., Hagerstown, Md.

Pangborn

Look to Pangborn for the latest developments in Blast Cleaning and Dust Control equipment

BLAST CLEANS CHEAPER
with the right equipment for every job

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EBERT MERCURY RELAYS
for POWER CONTROL FUNCTIONS

- COMPACT — Saves Space
- EASILY INSTALLED — Saves Time
- LONGER LIFE — Saves Cost
- SILENT and CHATTERLESS — Eliminates Noise
- HERMETICALLY SEALED — Explosion Proof
- MERCURY-to-MERCURY CONTACTS — No Burning, Pitting or Sticking — And Unaffected By Moisture, Dust or Temperature Changes!

FOR 1, 2 or 3 POLE OPERATIONS NORMALLY OPEN OR NORMALLY CLOSED

Catalog Available On Request
EBERT ELECTRONICS CO.
212-26 G Jamaica Avenue
Queens Village 28, L. I., N. Y.

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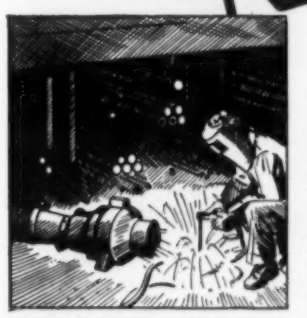
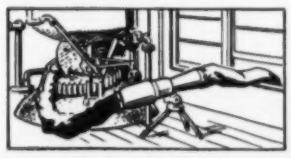

WELDING FUMES are here removed by this Vano Ventilator-Exhauster.


FUMES FROM A REACTOR KETTLE are here withdrawn by tripod-mounted Vano Ventilator-Exhauster. Note non-collapsible suction tubing and discharge tubing.

Ventilate CONFINED Places with Vano Design "C" Ventilator-Exhauster

Ideal for withdrawing welding fumes from confined places or directly from the welding rod. Provides greater safety, greater comfort for workers . . . leads to greater work efficiency. Can be furnished with 8" suction inlet to which 8" non-collapsible suction tubing may be attached . . . or provided with multiple inlet nozzles for 5", 4" and 3" suction hose.

Other types are also available for supplying fresh air to men working in confined places, such as tanks, manholes, drums, boilers and ship-holds.

For full details on Coppus Vano Design "C" Ventilator-Exhauster write COPPUS ENGINEERING CORPORATION, 403 Park Avenue, Worcester 2, Mass.

ANOTHER COPPUS "BLUE RIBBON" PRODUCT

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Can Bridgeport INNER-SEAL solve your sealing problem?

Industry is constantly finding new applications for INNER-SEAL, the flexible, tough gasketing material. It's used for insulating, cushioning, gasketing in the automotive, railway and refrigeration fields. It's also used for countless other purposes in manufacturing—wherever sealing problems occur.

INNER-SEAL's patented construction—spring steel molded in live sponge rubber.—makes an effective, pressure-tight seal. Neoprene coated INNER-SEAL is waterproof . . . resists sub-zero and tropic temperatures, sunlight, humidity, grease, oil and abrasion. INNER-SEAL fits perfectly into corners, around curves . . . lasts for years.

INNER-SEAL is stocked in standard dimensions and colors. Heavy-duty type available in black. Special types or colors made to order.

Perhaps INNER-SEAL can help you solve your sealing problem—and make *your* product better! Investigate INNER-SEAL!

Write today for FREE SAMPLES *and complete information.*

BRIDGEPORT FABRICS, INC., BRIDGEPORT 1, CONN.

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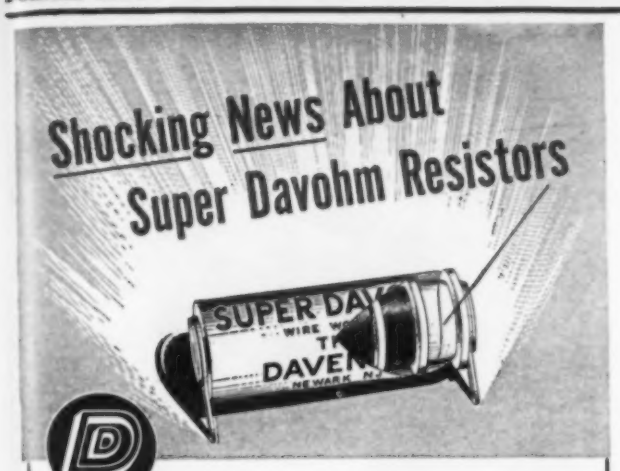
Shocking News About Super Davohm Resistors



Only Daven uses a stranded lead wire to connect the resistance wire to the solder terminal of the Super Davohm Precision Wire Wound Resistor.

Result: Super Davohm Resistors are more rugged, can withstand more vibration, rougher treatment and abnormal shocks because all stress, strain, heat or pressure, applied to the solder terminal, is absorbed by the heavy lead wire so that the resistor is not adversely affected in any way.

This is only one of the many exclusive features which make DAVEN the leader in the resistor field.

EXCELLENT DELIVERIES • Write for detailed bulletin

THE DAVEN CO. 199 Central Avenue Newark 4, N. J.

VISIT US AT THE I.R.E. SHOW Booths 543 & 545

For more details circle NED-435 C4 on enclosed inquiry slip

Can you name an operation that will save as much for you as weighing?

It's good business to watch weights closely! Check at receiving, shipping, production stages without delaying handling.

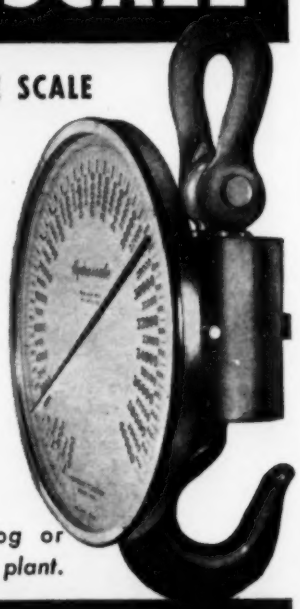
Put a stop to paying for dunnage, inaccuracies, other's miscalculations that rob you of your profit. Weigh loads as you lift them to move them by crane or hoist. Speed inventories, eliminate labor and equipment tie-ups at the weighing station.

Thousands of HYDROSCALES are at work in large and small plants all over the country.

The cost of weighing has been reduced to a minimum by—

HYDROSCALE

HYDRAULIC CRANE SCALE



36 models
500-200,000 lbs.

12", 24", 30" dials

Tilt face models for high level reading

Combined reading kilogram-pound dials

Batching models indicate pour-off

Write for our catalog or demonstration in your plant.

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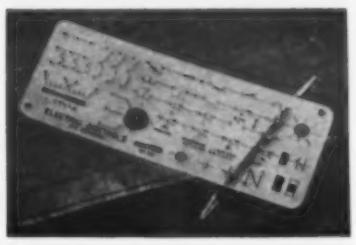
20624 WEST 8 MILE ROAD · P. O. Box 4754 · DETROIT 19, MICH.

For more details circle NED-436 C4 on enclosed inquiry slip

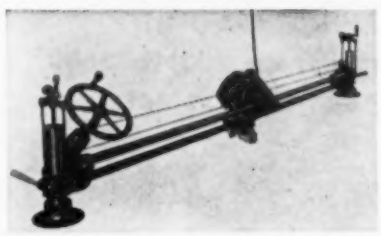
ELECTRIC CONTROLS TEMPLATE shows new JIC symbols



Designed to assist in depiction of circuits in electrically controlled machinery and electric automation of production processes, No. 312 electric controls template incorporates March 1953 JIC standard symbols. It is fabricated from 0.030 matte finish mathematical quality plastic, with machine-milled cutouts grouped for greatest ease in drawing combinations most frequently appearing in sequence. Template measures 9 x 3⅜ in. and price is $2.50. Made by **Rapidesign, Inc.,** P. O. Box 592A, Glendale, Calif.

For more details circle NED-437 C4 on enclosed inquiry slip

PANEL SAW accommodates stock up to 10 ft long



Larger diameter rails increase rigidity of this MLR panel saw over 100 per cent, enabling it to accommodate stock up to 10 ft long. Saw produces bevel or miter cuts from 0 to 90 degrees on metal, plastic, or plywood sheet stock. Cutting rates up to 75 fpm can be attained and the carriage returned to starting position in 5 seconds. Any of several popular variable speed drives can be belted directly to drum shaft for repetitive production cutting. Single- and three-phase motors can be supplied. Unit is light enough to be semiportable. Made by **Hendrick Mfg. Corp.,** Room 370, 11 Selman St., Marblehead, Mass.

For more details circle NED-438 C4 on enclosed inquiry slip

FLEXIBLE CONDUIT FITTINGS 4 and 5-in. sizes available

Available in both 4 and 5-in. sizes, flexible conduit fittings are of heavy duty construction with four bolt clamps and ridges cast into the clamping member to engage the convolutions of the flexible member. Both connectors and couplings are available. Connectors are furnished complete with locknut. Fittings are furnished as standard in cast aluminum alloy. Other materials can be specified. Made by **Adalet Mfg. Co.,** 14314 Lorain Ave., Cleveland 11, O.

For more details circle NED-439 C4 on enclosed inquiry slip

step up to the

safety level

Dayton Safety Ladders pay their own way. The "safety level" working platform makes high jobs "ground-safe" — helps prevent costly ladder accidents. Check the "big 6" features that make Dayton your best buy.

1. Rail guarded "safety level" platform.
2. Locks in place automatically.
3. Rubber safety shoes.
4. Light weight—great strength.
5. Economically priced.
6. Complete size range 3' to 16' in height.

Write Dept. E for Bulletin

Dayton safety ladders

Dayton safety ladder co.
2339 Gilbert Ave., Cincinnati, O.
In Canada—
SAFETY SUPPLY CO., TORONTO

For more details circle NED-440 C4 on enclosed inquiry slip

SIMPLIFY Your Shape-Cutting Jobs with the... OXWELD Automatic Tracer

Trade-Mark

- Positive templet contact... electronic steering control ... maximum tracing accuracy
- Templets are easy to make, low-cost
- No kerf allowance required in templet
- Dynamic braking prevents overruns
- Local or remote controls ... simple to operate

With an OXWELD Automatic Tracer to guide your oxygen-cutting machine, you need never forego the advantages of templet tracing because of time or cost. Just cut actual size templets out of thin plastic sheet with scissors—that's all! Tracer follows practically any templet shape within extremely close tolerances. Drive action is smooth and steady with both single- and multiple-blowpipe setups. Write today for free booklet F-8086.

LINDE AIR PRODUCTS COMPANY
A Division of Union Carbide and Carbon Corporation
30 East 42nd Street UCC New York 17, N. Y.
Offices in Other Principal Cities
In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto

The term "Oxweld" is a registered trade-mark of Union Carbide and Carbon Corporation.

For more details circle NED-441 C4 on enclosed inquiry slip

Just a single stroke!...

CUTS ROUND RODS ⅛" to ⅞" on a

MARVEL ROD CUTTER

Available in three models:

No. 5	⅛	3/16	¼	5/16	⅜
No. 6	⅜	7/16	½	9/16	⅝
No. 7	⅜	½	⅝	¾	⅞

These are bench models, but the No. 7 MARVEL Rod Cutter can be furnished mounted on legs. See your Industrial Distributor or write us for literature and prices.

ARMSTRONG-BLUM MFG. CO.
5700 W. Bloomingdale Ave. • Chicago 39, U.S.A.
Manufacturers of the outstanding MARVEL Metal Saws.

For more details circle NED-442 C4 on enclosed inquiry slip

FLEXIBLE METAL HOSE of 1001 USES...

PRESSURE-SAFE AT 2400 p.s.i.

Titeflex's seamless metal hose, Uniflex, in this application recharges combat planes with oxygen. The job requires a tough-flexible hose that is pressure-tight and leak-proof, withstands corrosion, and vibration. For YOU, one of the many ranges of Titeflex hose can easily handle steam, gases, fuel, lubricants, air, water, many acids. Find out how Titeflex can solve your problem.

Titeflex

TITEFLEX, INC.
507 Frelinghuysen Ave., Newark 5, N.J.
Please let me have more information about TITEFLEX® Flexible Metal Hose and its uses.
Name _____
Title _____
Firm _____
Address _____
City _____ Zone _____ State _____

For more details circle NED-443 C4 on enclosed inquiry slip

Check into this

How many men does it take to handle a heavily loaded barrel or drum?

ANSWER: Only ONE if you use a—

SABIN One Man BARREL TRUCK

Think of the labor you'll save.

It's easy for a man, without helpers, to pick up and move loads up to 800 pounds. All he does is run truck up to container, hook on at top, and pull back on handle to pick up load. Exclusive Third Wheel Feature assures better balance and safer movement of loads.

WRITE FOR BULLETIN NO. 48-A

The Sabin Machine Co.
6536 Carnegie Ave.
CLEVELAND 3, OHIO

For more details circle NED-444 C4 on enclosed inquiry slip

New!

CROWN FOUNTAIN PEN for Design Layout Ink

Flows Ink Exactly Where You Want It — EVEN ON SMALLEST WORK AREAS!
Prevents Soiling of Fingers and Work

Newest, handiest way to apply design layout ink in small areas. Obsoletes use of brushes! Crown pen lays ink on in smooth, sharp edged strokes. Precision type valve controls flow of ink to felt tip — no waste or spilling! Pen holds over one ounce of ink — can be used on any surface.

SPECIAL INTRODUCTORY OFFER! For limited time only ONE CROWN LAYOUT INK PEN, complete with 1 pointed tip and 3 ½" chisel tips and 1 pint of CROWN Layout Ink in pour spout can.
ALL FOR $5.60
(Regular $6.60 Value)

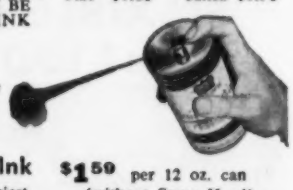
New! CROWN BULK Design Layout Ink

now available in 8 oz., pint or quart pour-spout cans or in gallons. Dark blue.

A SUPER QUALITY INK to give you best results with any method of application. THE ONLY INK THAT CAN BE USED IN CROWN LAYOUT INK PENS!

8 oz. $1.00 Quart $2.50
Pint $1.65 Gallon $8.75

CROWN "Spray-On" Design Layout Ink



Just press the trigger on the can! Easiest, fastest way to apply design layout ink on most jobs. Dark blue, non-glare, easily scribed surface. Thousands of satisfied users!

$1.50 per 12 oz. can (without Spray Head)
15% discount on cases of 12 cans
Spray Heads, Each 15c Extra

ALL PRICES F.O.B. WOODSTOCK, ILLINOIS — SUBJECT TO CHANGE WITHOUT NOTICE — STATE OR LOCAL SALES TAX EXTRA

ORDERS SHIPPED SAME DAY RECEIVED

CROWN INDUSTRIAL PRODUCTS COMPANY
723 Amsterdam St., Woodstock, Illinois

Please ship us the CROWN products indicated below:

ITEM	QUANTITY
Introductory Kit — Pen, 3 Extra Tips and 1 Pint Ink.	
Bulk Design Layout Ink.	8 oz. / Pint / Quart / Gal
"Spray-On" Design Layout Ink — 12 oz. Pressure Can	
Spray Heads for Pressure Can	

☐ Check enclosed $_____ ☐ Our Purchase Order No. _____

COMPANY_____

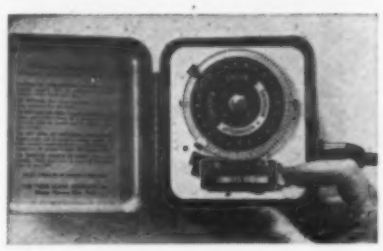
ADDRESS_____

CITY_____ ZONE_____ STATE_____

Authorized Signature

For more details circle NED-445 C4 on enclosed inquiry slip

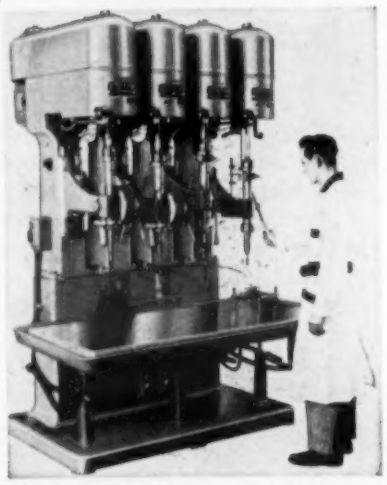
AUTOMATIC TIME SWITCH can turn on equipment at preset time



Industrial applications of portable, Telechron motored model 919 automatic plug-in time switch includes turning on or preheating lead-pots, ovens, soldering tools or electric coffee urns at preset times each day. It eliminates time lost in preparing working material or tools that require heating before work can begin. Omitting device allows switch to skip days plant does not operate. Manual on-off control is also incorporated and does not disturb master cycle when used. As many devices as desired, up to 1650 w capacity, can be controlled at one time, and trippers for extra on-off operation can be installed. Made by **Tork Clock Co.**, Dept. NED, 1 Grove St., Mt. Vernon, N. Y.

For more details circle NED-446 C4 on enclosed inquiry slip

DRILLING & TAPPING MACHINE spindle speeds from 200 to 3600 rpm can be instantly selected



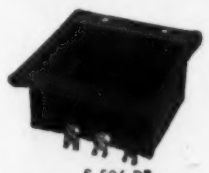
Infinitely variable speed drive of model 2F drilling and tapping machine allows operator to select correct speeds instantly without losing time for changing gears or belts. Spindle speeds ranging from 200 to 3600 rpm, a low of 200 to 1200 rpm and a high of 600 to 3600 rpm, with three intermediate speed ranges are standard. Dial indicates speed selected. With back gear attachment, an additional range of speeds from 50 to 900 rpm is obtained. Capacity with back gears is ⅞-in. for steel, 1¼ in. for cast iron.

Additional equipment includes semiautomatic power feed which engages as drill touches work; reversing motor tapper, capable of tapping 30 holes per minute and reversing at same depth within ¼-turn of tap; lead screw tapper with adjustable stops and interchangeable pick off gears; work lights; and Gusher coolant system. Models with 8 and 15-in. overhang and from one to eight spindles are available in pedestal type machine. Round column types with same overhang are also available. Made by **Edlund Machinery Co.**, Dept. 48, Cortland, N. Y.

For more details circle NED-447 C4 on enclosed inquiry slip

For HEAVY DUTY WORK! Severest Electrical Services

P-506-CE—Plug with Cap



S-506-DB Socket with deep Bracket

JONES PLUGS & SOCKETS
500 SERIES
Proven Quality!

For 5,000 Volts, 25 Amperes per Contact Alterable by circuit Characteristics.

Socket contacts of phosphor bronze, knife-switch type, cadmium plated. Plug contacts hard brass, cadmium plated. Made in 2, 4, 6, 8, 10, and 12 contacts. Plugs and sockets polarized. Long leakage path from terminal, and terminal to ground. Caps and brackets, steel parkerized (*rust-proofed*). Plug and socket blocks interchangeable in caps and brackets. Terminal connections most accessible. Cap insulated with canvas bakelite.

Write for Jones BULLETIN 20 for full details on line.

Jones
HOWARD B. JONES DIVISION
CINCH MANUFACTURING CORPORATION
CHICAGO 24, ILLINOIS
SUBSIDIARY OF UNITED-CARR FASTENER CORP.

For more details circle NED-448 C4 on enclosed inquiry slip

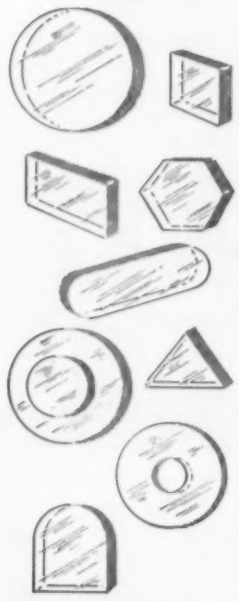
If you move hot, abrasive materials in your operations, you'll do it faster and more economically with either a Simplicity Os-A-Veyor (oscillating type conveyor) or a Model PT Positive Action Conveyor. Simplicitys are ruggedly built for tough duty. Simple power units and operating mechanism mean low maintenance costs and easy servicing. Model PT conveyors, built in lengths of 100', can be installed in multiples to meet any level-operation requirement. Os-A-Veyor types, available in lengths to 30' and 12" to 6' widths, will operate on an incline depending on product being handled. Simplicity conveyors give positive rate of feed control and handle all kinds of material, regardless of temperature and abrasive characteristics, without damage. Write, wire, or phone . . . today.

92

Simplicity
ENGINEERING CO., DURAND, MICH.

For more details circle NED-449 C4 on enclosed inquiry slip

Call SWIFT for SIGHT GLASSES



precision-ground in perfectly true circles

Let us supply you with Perfectly True Circles precision-ground from heat-resistant Pyrex Polished Plate Glass . . . used by major chemical companies from coast to coast. Resist clouding, pitting, chemicals (except HF and strong hot caustic solutions).

We can deliver immediately specially cut round, square, rectangle or odd-shaped Sight Glasses in 8 thicknesses (⅛" to 1"), sizes up to 24" x 60". Write, wire or phone for quotation. Ask for Sight Glass Bulletin.

SWIFT Glass Division
SWIFT LUBRICATOR COMPANY, INC., ELMIRA, N.Y.
330 Tenth St., San Francisco 3 • 140 Boylston St., Boston 16
807 Mateo St., Los Angeles.

For more details circle NED-450 C4 on enclosed inquiry slip

For PRESS STAMPING PRODUCTS WITH CURVED OR STRAIGHT LINE MARKING

PRESS STYLE STEEL TYPE HOLDER
MODEL PH-50

Body and press shank are one piece with flanges to hold type chase in position. Type chase with almost any size or number of characters can be removed and inserted without operator placing hands in press.

Write for Catalog 100

Mecco SAFETY MARKING TOOLS
M.E.CUNNINGHAM CO.
1055 CHATEAU STREET, PITTSBURGH 33, PA.

For more details circle NED-451 C4 on enclosed inquiry slip

FREE LUBRICATION SURVEY OF YOUR PLANT

Eliminate bearing failures like this
(due to haphazard lubrication)

An experienced Farval engineer will come into your plant and conduct a Free Lubrication Survey of your equipment. This Farval Survey will tell you:

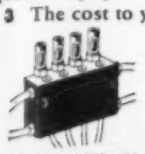
1 The most economical method of lubrication for each piece of your equipment.

2 Whether centralized lubrication can be installed on your present equipment.

3 The cost to you of a Farval centralized system of lubrication on any or all pieces of machinery.

4 How centralized lubrication can increase bearing life, save you maintenance costs and increase production.

These are facts that can save you thousands of dollars! A Farval engineer is ready to serve you promptly. This is a Free Survey—no obligation. Write today!



THE FARVAL CORPORATION
3283 East 80th Street • Cleveland 4, Ohio

Affiliate of The Cleveland Worm and Gear Company, Industrial Worm Gearing

▲ For more details circle NED-452 C4 on enclosed inquiry slip ▲

How to check DOWNTIME!

NOW, you can see, right in your office Every time a machine STANDS IDLE—and how long!

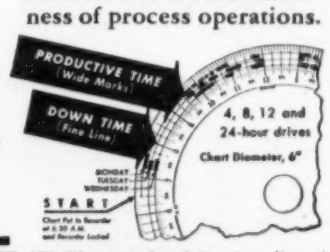
with electrical Model M SERVIS RECORDER

The Servis Recorder Chart (sample portion below) instantly shows all stops and delays. So you can reduce downtime, increase production and thus repay the cost of Servis Recorders *many times over!* . . . Also valuable in time studies to set rates and to check exactness of process operations.

FEATURES OF NEW MODEL M
• Visible, electrical recording • Location anywhere, distant from machines • No ink, no pen to obscure chart • Far *lower* cost than comparable devices.

WRITE FOR "MODEL M" FOLDER

THE SERVICE RECORDER CO.
1375A Euclid Avenue
Cleveland 15, Ohio



▲ For more details circle NED-453 C4 on enclosed inquiry slip ▲

new folder shows how Remington Rand can help you...

modernize to economize

Savings up to 25% in clerical cost alone have been achieved by modernization of office equipment and systems. This new folder shows you how Remington Rand's new visible record keeping equipment increases office efficiency and work output . . . can give you more production for every dollar spent. The cost of the new equipment and systems necessary to do this will quickly be amortized by the increased production you obtain and the economies effected.

For free folder, "Modernize to Economize," (KD730), write to the Management Controls Reference Library, Room 1915, 315 Fourth Ave., New York 10.

Remington Rand INC
PROFIT-BUILDING IDEAS FOR BUSINESS

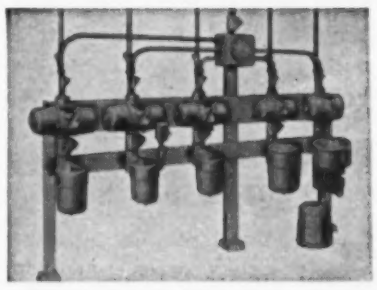
▲ For more details circle NED-454 C4 on enclosed inquiry slip ▲

DUAL PURPOSE RESPIRATOR for vapor cartridges or dust filters

Protection against either organic vapors or dust is provided by this dual purpose respirator. As the No. 99 respirator, for organic vapors, it has twin 85cc cartridges with inhale and exhale check valves to prevent re-breathing. Cartridges are quickly replaced from front by unscrewing retainer caps. As the No. 96 respirator, for dusts, it has twin treated wool-felt filters which are also quickly replaced from the front. Because there are no outer screens or covers over filters, entire surface area of each is usable. Face piece is contoured of soft rubber to provide snug, leakproof fit even with light tension on the two adjustable headbands. Made by **Chicago Eye Shield Co.**, 2335 Warren Blvd., Chicago 12, Ill.

▲ For more details circle NED-455 C4 on enclosed inquiry slip ▲

COMBINATION ENCLOSURES for motor starters, circuit breakers are explosionproof and UL approved



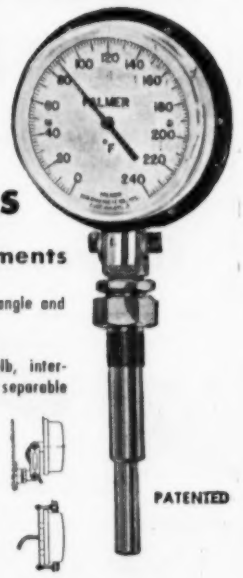
Line of explosion-proof, dust-tight, raintight Unilet circuit breaker, motor starter and line starter combination-enclosures carry Underwriters' Laboratories approval. These units can be joined in combination with a new U. L.-approved sealing Unilet to meet U. L. requirements in certain sizes. Each component possesses a full seven-thread engagement at the coupling joints. Safe entrance to individual motor starters for maintenance work is assured in both single and banked combinations in hazardous areas without shutting off other branch circuits. No live circuit breaker wires are exposed while the motor starter enclosure is open on a line starter combination.

Mounting frames are standardized for interchangeability of most well-known makes of circuit breakers and motor starters in certain sizes. They are suitable for all breaker-starter control equipment up to 225-amp breaker loads and to 100 hp on three-phase induction motors at 600 v maximum. Made by **Appleton Electric Co.**, 1758 Wellington Ave., Chicago 13, Ill.

▲ For more details circle NED-456 C4 on enclosed inquiry slip ▲

PALMER

MERCURY ACTUATED DIAL THERMOMETERS



in 3 types to suit any requirements

Full 4½" dial face. Stem can be placed at any angle and case can be rotated to any readable position.

1 **Rigid Stem Dial Thermometer** tapered bulb, interchangeable with standard industrial thermometer separable socket. (As illustrated above.)

2 **Wall Mounted Dial Thermometer** with flexible connecting armor. Case adjustable to easy reading position.

3 **Flush Mounted Dial Thermometer** for panel mounting with flexible connecting armor.

All three types have a full 4½" dial face.

for accuracy: Mercury actuated . . . Fully Compensated by Invar Compensation. Guaranteed Accurate 1 scale division.

for angularity: Can be adjusted to most readable position at any angle desired.

for readability: Bold Black Numbers . . . 11" of scale Reading Dial face can always be placed in easiest readable position.

for interchangeability: Always specify "PALMER" Separable sockets as they are interchangeable for Dial or Industrial type Thermometers.

Send for Bulletin 51-129 for details on the New Palmer Dial Thermometer.

PALMER THERMOMETERS, INC., Cincinnati 12, Ohio
Mfrs. of Industrial Laboratory Recording and Dial Thermometers

▲ For more details circle NED-457 C4 on enclosed inquiry slip ▲

SEND FOR FREE BOOKLET

General Box COMPANY
1859 Miner Street
Des Plaines, Illinois

Factories: Cincinnati; Denville, N. J.; Detroit, East St. Louis, Kansas City, Louisville, Milwaukee; Prescott, Ark.; Sheboygan; Winchendon Mass.; General Box Company of Mississippi, Meridian, Miss.; Continental Box Company, Inc., Houston.

▲ For more details circle NED-458 C4 on enclosed inquiry slip ▲

You're ahead 3 WAYS with KEM LUSTRAL® ENAMEL!

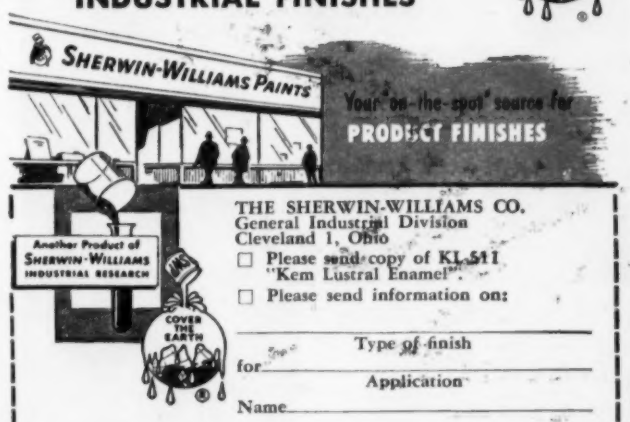
Simplify the job . . . do away with need for many special enamels . . . get the benefit of volume production of highest industrial quality materials!

If you use enamels for any purpose, or for any product—wood or metal—KEM LUSTRAL's multi-usefulness may show a way to important savings.

Get the facts about this top-quality, versatile industrial enamel! It's one of a complete line of Sherwin-Williams product finishes especially developed to meet production-line requirements. Check your classified telephone directory for location of your nearest Sherwin-Williams Branch. Ask for brochure KL-511. Or mail the coupon below.

Services of trained industrial finish specialists available in your area through nearest Branch.

SHERWIN-WILLIAMS
INDUSTRIAL FINISHES

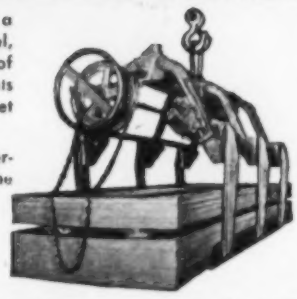


THE SHERWIN-WILLIAMS CO.
General Industrial Division
Cleveland 1, Ohio
☐ Please send copy of KL-511 "Kem Lustral Enamel".
☐ Please send information on:
Type of finish
for Application
Name
Company
Address

▲ For more details circle NED-459 C4 on enclosed inquiry slip ▲

Wide *or* Narrow...

1 C-F LIFTER HANDLES THEM ALL



Whether your production requires a few or many widths of sheet steel, 1 C-F Lifter, with its wide range of jaw and carrying angle adjustments will probably meet all your sheet handling requirements.

Adjustments are made by the operator in a few seconds, permitting the Lifter to shift from wide to narrow sizes almost instantly.

Because it can pick up, carry and unload more loads per hour, using less man and crane time than any other methods, a C-F Lifter will soon pay for itself.

Bulletin SL-28 gives you the complete story of C-F Lifter advantages to you. Ask for it today. There is no obligation.

CULLEN-FRIESTEDT CO.
1304 South Kilbourn Avenue • Chicago 23, Illinois

▲ For more details circle **NED-460 C4** on enclosed inquiry slip ▲

Lightweight-Economical

IT'S THE REVOLVATOR® UPLIFTER ELEVATOR

Adaptable for shop use or warehouse handling and ideal for shipping and receiving — the new electric Uplifter is the real buy today in materials handling. In two capacities, 1000 - 2000 pounds, platform sizes 24 x 24 and 30 x 30, lifts of 62 and 65 inches on standard models — the Revolvator Uplifter can be had powered by a variety of electric circuits ranging from an automobile battery to 220 volt currents.

Priced under all competition, the Uplifter includes all the safety and convenience features that have made Revolvator portable elevators a standard in industry. Get full information today on this new, easy operating inexpensive portable elevator. Remember, too — we build Revolvator Portable elevators to your particular needs.

Write or phone

REVOLVATOR CO.
8732 TONNELE AVENUE, NORTH BERGEN, N. J. • UNion 3-8120

▲ For more details circle **NED-461 C4** on enclosed inquiry slip ▲

SHAFT-MOUNTED SPEED REDUCER
Easy to install as a standard pulley!

This time-tested idea in speed reducers cuts installation and operating costs. The Shaft-King mounts directly on the shaft of the driven machine, runs on any power source, requires no foundations or supports, no engineering to install, remove or relocate. Made in 13:1 and 20:1 ratios for horizontal and vertical mounting. With American Wedgbelt Drives it covers a range of speeds from 154 RPM down, and power requirements through 40 HP.

Write today for the Shaft-King Catalog. Shaft-King companion products: Backstops; Overload Releases; Wedgbelt Econ-O-Matic Drives.

The American Pulley Company
4294 Wissahickon Ave., Phila. 29, Pa.
Gentlemen: Please send me:
☐ Shaft-King Catalog ☐ Information on;
No obligation of course.
Name
Title
Address
City Zone State

At the profit end of the machine
Power Transmission by
AMERICAN PULLEY COMPANY

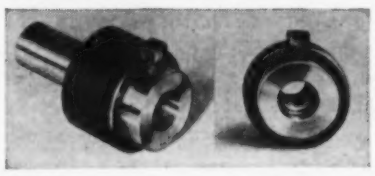
▲ For more details circle **NED-462 C4** on enclosed inquiry slip ▲

EARPHONE
hearing-aid type weighs ½-oz

Weighing ½-oz, Earset is a single-phone headset of hearing-aid type. Flat plastic frame centers receiver opposite the ear, leaving the other ear free for phone calls or conversation. Earset can be used for transcription, radio monitoring, multiple listening and similar applications. Its frequency response runs from 50 to 4000 cycles and gives comfortable listening at 0.3 mw input. Made by **Telex, Inc.**, Dept. NED, Telex Park, St. Paul, Minn.

▲ For more details circle **NED-463 C4** on enclosed inquiry slip ▲

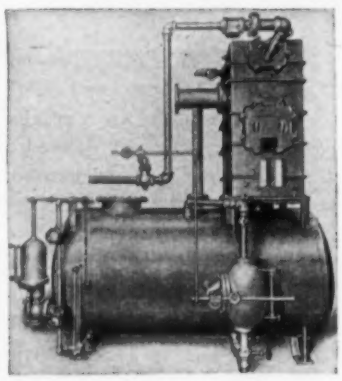
TAP HOLDER
features through-hole design



Center-hole running through the Amcam Tap-Holeder makes it possible to insert full length tap without grinding off part of shank in order to seat tool in blind hole. Broken tap can also be extricated without removing holder bushing or disassembling holder from machine. Broken shank piece can be knocked out the back of the holder while it remains on machine. Made by **American Cam Co.**, Dept. N, Hartford 1, Conn.

▲ For more details circle **NED-464 C4** on enclosed inquiry slip ▲

WATER DEAERATORS
outputs up to 60,000 lb per hour



Available in storage tank sizes ranging from 35 to 250 cu ft, Uni-Pac water deaerators have outlet capacities ranging up to 60,000 lb per hour. Factory assembled package type units are specially designed for small and medium size power plants. Oxygen content of delivery water is less than seven parts per billion. Units are available with either right or left hand location of steam inlet facing tray door. They heat water to the full temperature corresponding to the saturated steam pressure maintained within the unit. Made by **Cochrane Corp.**, 3143 N. Seventeenth St., Philadelphia 32, Pa.

▲ For more details circle **NED-465 C4** on enclosed inquiry slip ▲

WHICH V-BELT *is best for you?*

If the correct size of endless V-Belt is not readily available, or if you have to tear down machinery to install, then the best belt to use is open-end V-Belting fastened with

ALLIGATOR V-BELT FASTENERS

★ In this way you can make up V-Belts in *any length* to fit *any drive* the fast economical way—V-Belts that perform exceptionally well.

★ In contrast to link-type belts these ALLIGATOR fastened V-Belts have just *one* strong joint . . . *stretch and follow-up maintenance are reduced to a minimum.*

ALLIGATOR INTRODUCTORY V-BELT DRIVE UNITS

contain V-Belting, Fasteners and Tools —everything you need in one compact package to make up V-Belts quickly. Available in sizes A, B, C & D.

Ask for Bulletins V-215 and V-216
Order From Your Distributor

FLEXIBLE STEEL LACING COMPANY
4664 Lexington Street, Chicago 44, Illinois

▲ For more details circle **NED-466 C4** on enclosed inquiry slip ▲

LIFTS DIRT FROM FLOORS... HOLDS IT OFF...

CINDET

100% ACTIVE 100% SAFE!

NEW LIQUID SYNTHETIC DETERGENT

Whether your water supply is HARD or SOFT, cleaning with CINDET means *no curds, no dingy film!* CINDET is *surface-active*—it works on the principle of LIFTING floor dirt, grease and old water-emulsion wax from floors and HOLDING it in suspension in a fluffy mass of energetically-cleaning SUDS. *Dirt is not re-deposited*—rinses off easily.

Dilute a little CINDET in HARD or SOFT water . . . apply with clean mop . . . let foamy, clean-looking suds stand 5 or 10 minutes . . . scrub only if necessary, and rinse thoroughly. The result: AMAZINGLY BRIGHT, CLEAN FLOORING.

Safe for *all* flooring—and wonderful for removing stubborn rubber marks. Also excellent for walls, for shampooing rugs and upholstery, for washing dishes by hand.

DOLGE backs up CINDET with a complete-satisfaction-or-deal-is-off GUARANTEE! Write for literature; have your DOLGE SERVICE MAN demonstrate CINDET *on your dirtiest, greasiest flooring.*

THE SUDS DO THE WORK!

FOR FREE SANITARY SURVEY OF YOUR PREMISES SEE YOUR DOLGE SERVICE MAN

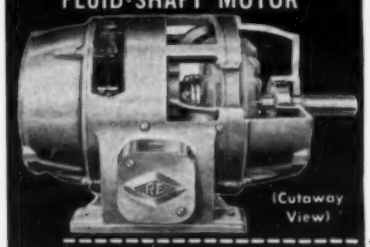
expendable **DOLGE**
WESTPORT, CONNECTICUT

▲ For more details circle **NED-467 C4** on enclosed inquiry slip ▲

motor design problem?

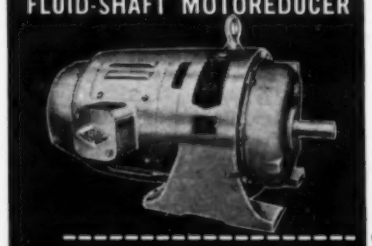
...maybe one of these **REULAND** *"specials" will solve it!*

FLUID-SHAFT MOTOR



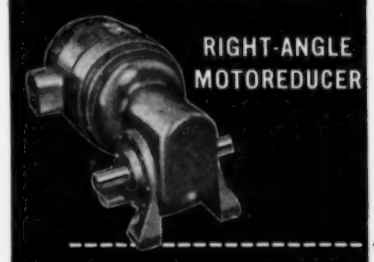
Motor with *internal* fluid coupling. Provides smooth load acceleration. More compact than separate motor and coupling. Assures *perfect alignment.* Will start heavier loads than standard motors of same horsepower. Used on cranes, conveyors, etc.

FLUID-SHAFT MOTOREDUCER



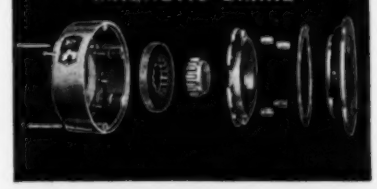
Consists of Reuland Fluid-Shaft motor and gear reducer as one compact unit. Converts the motor's conventional high speed into a slow speed, high torque output. Provides smooth starts. Prevents equipment jamming. Used on cranes, hoists, car pullers, etc.

RIGHT-ANGLE MOTOREDUCER



Consists of Reuland motor and worm gear reducer. Provides unlimited mounting versatility. Permits use of 1 high speed and 2 slow speed power-take-offs, if desired. Ideal for designing into cramped quarters. Also available with Fluid-Shaft drive motor.

THROUGH-SHAFT MAGNETIC BRAKE



"Doughnut" type design allows extension of shaft entirely through brake. Permits use of TWO output shafts per motor. Can be mounted on the input or output shafts (or both) of Fluid-Shaft motors and motoreducers. Only 6 major parts...self adjusting... half usual length.

OVER 600 SPECIAL ELECTRIC MOTOR DESIGNS

Whatever your drive problems may be, there is a good chance that the Reuland "library of specials" contains a unit that is already tailored to your needs. Its availability will save development work and put you in production faster.

Write today, outlining your particular problem. No obligation, of course.

REULAND ELECTRIC COMPANY

WESTERN DIVISION—Alhambra, Calif. • EASTERN DIVISION—Howell, Mich.

DISTRIBUTORS IN ALL PRINCIPAL CITIES

▲ For more details circle **NED-468 C4** on enclosed inquiry slip ▲

for dependable, trouble-free control of "hard-to-hold" fluids . . . .

SPECIFY
HOMESTEAD
Lever-Seald
VALVES

they provide sure shut-off . . .

ARE STICK PROOF . . . OPERATE INSTANTLY

Positive, drop-tight seal and instant, stick-proof operation are assured by the exclusive Homestead Lever-Seald mechanism. This powerful lever-and-screw device not only presses the valve's tapered plug firmly into its seat to form a drop-tight seal, but also provides a positive means of relieving seating pressure to permit easy operation. Because all operating parts and seating surfaces are protected in open and closed positions from line fluids, long, dependable, trouble-free service is doubly assured.

If "hard-to-handle" fluids are your problem, specify Homestead Lever-Seald Valves for your next installation or as replacements. We make them in metals and alloys to specification in sizes 1½" to 12", pressures from vacuum to 1500 lbs.; temperatures from 40° below zero to 1100°F. Dry seat, or pressure gun lubricated optional.

Send for details and copy of VALVE REFERENCE BOOK No. 39-3.

HOMESTEAD VALVE MANUFACTURING COMPANY
P. O. Box 84 "Serving Since 1892" Coraopolis, Pa.

▲ For more details circle NED-469 C4 on enclosed inquiry slip ▲

DeVilbiss Hose
LASTS LONGER

Specially compounded materials—special braiding of select yarns—special processing and testing give you a *premium* quality hose that costs less in the long run. DeVilbiss fluid hose is unsurpassed for resistance to solvents and oils of all types. Air hose is unmatched for its flexibility, wear resistance and kinkproof construction. All this means better service—fewer failures and less replacement. *Buy the best*—buy DeVilbiss. Write for full details.

DEVILBISS
THE DEVILBISS COMPANY
Toledo, Ohio
Santa Clara, Calif. • Barrie, Ontario • London, England

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Drill Hardened Steels
without Annealing—

USE
The New
IMPROVED
"HARDSTEEL"
DRILL

With the new, improved "HARDSTEEL" Drill, you can do accurate, smooth drilling, countersinking, counterboring and reaming in steels hardened by any process without first annealing the work. And they work with equal ease on work-hardening steels and high carbon—high chrome steels of any degree of hardness.

"HARDSTEEL" Drills fit standard drill presses. They save time and reduce rejects. They permit engineering changes requiring additional drilling after hardening. And parts drilled after hardening always match at assembly.

Write for a copy of the "HARDSTEEL" Operators Manual showing how "HARDSTEEL" drills are cutting costs in thousands of plants.

You Harden It—We'll Drill It—
With "HARDSTEEL"

BLACK DRILL COMPANY, INC.
1380 East 222nd St. • Cleveland 17, Ohio

Also makers of—
BLACK DRILLING UNITS—AUTOMATIC, SELF-CONTAINED—FOR COST-CUTTING PRODUCTION ON ALL MATERIALS
Write for information

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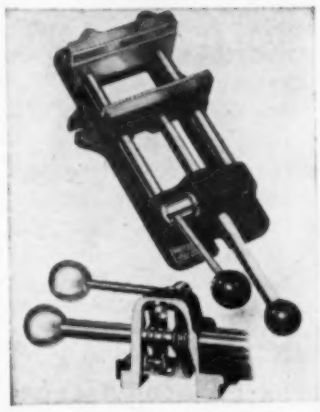
CHAIN SAW
is gasoline-engine powered

Adaptable for all wood cutting jobs from clearing hedgerows to lumbering, model 35 chain saw is powered by a gasoline engine and features trigger control. Saw is portable and will cut close to the ground. It has automatic oiler, air filter guard and positive chain tightener. Made by **Lombard Governor Corp.**, 150 Main St., Ashland, Mass.

▲ For more details circle NED-472 C4 on enclosed inquiry slip ▲

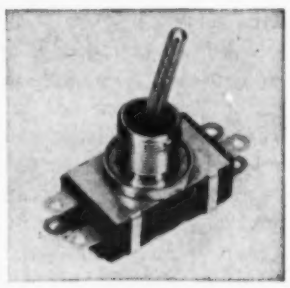
PUMP-ACTION VISES
clamp compressible materials



Designed to hold such compressible materials as steel laminations, warped castings, wood sections and plastics, series PA Grip-Master vises clamp progressively tighter when the locking handle is pumped. They exert holding pressures up to 1500 lb. Jaw widths of 3, 4, 6 and 8 in. are available. Units can be used to advantage as base structure for jigs and fixtures in such operations as drilling, boring and bending. Stock is provided in the castings for machining of keyway locating slots for use in production tooling set-ups. Made by **Heinrich Tools, Inc.**, Dept. 272, Racine, Wis.

▲ For more details circle NED-473 C4 on enclosed inquiry slip ▲

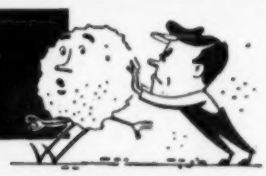
TOGGLE SWITCH
miniaturized unit is sealed



Double-pole, double-throw toggle switch of miniaturized design is rated 10 amp at 250 v and is sealed in a bushing for panel mounting by means of a bonded silicone rubber diaphragm. Switch measures 0.625 x 0.407 x 1.140 in. A rubber O-ring is used for static seal against the chassis or panel. In its two-throw positions, switch has a positive locking force between contacts of 500 grams, practically eliminating separation under impact or vibration. Electric current is transferred to the contacts directly by contact springs. Made by **Krautter-Weber Tool Co.**, Switch Dept., 69-77 Twelfth Ave., Newark 3, N. J.

▲ For more details circle NED-474 C4 on enclosed inquiry slip ▲

The case of the hesitant sand . . .



Yes, a New England foundry really did have a case like this. As the sand started down through the overhead bins and hoppers, it paused uncertainly, sort of reared back and held up production something terrible.

Fortunately, the foundry superintendent called us for advice.

In short order a battery of CLEVELAND vibrators were installed on the bins, and the sand hasn't hesitated ever since.

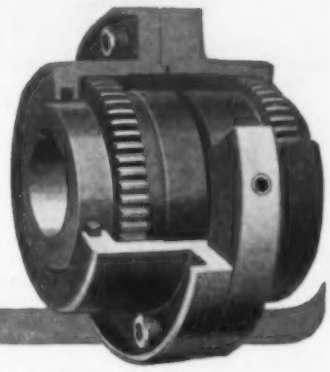
Whatever your hesitant material . . . cement, steel chips, ore . . . just tell us — or ask for our detailed literature.

Bin Stuck Lately? AIR and ELECTRIC
THE CLEVELAND VIBRATOR CO.
2744 Clinton Ave. • Cleveland 13, Ohio

▲ For more details circle NED-475 C4 on enclosed inquiry slip ▲

GREATER BORE CAPACITY
than other leading makes

New Link-Belt Geared Flexible Couplings are often smaller, lighter, lower cost for a given shaft size



THE compactness of Link-Belt's new geared flexible coupling is accomplished with no sacrifice of load capacity. It is easy to assemble and disassemble, even in limited space. An Allen wrench is the only tool required. Othe. advantages: Positive lubricant retention, provision for parallel and angular misalignment with minimum backlash. 13,604

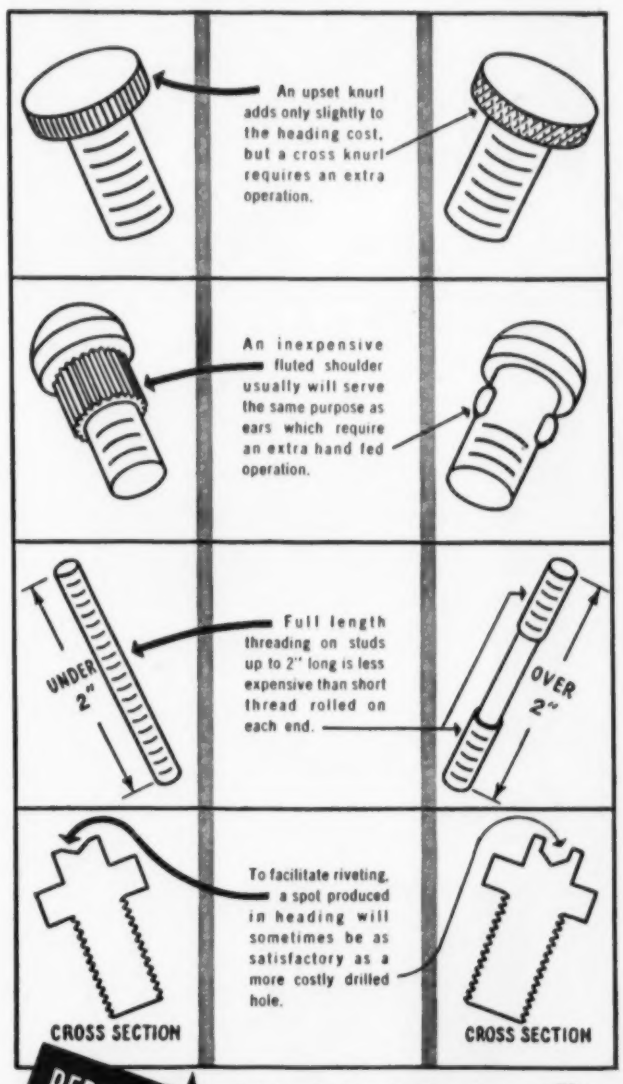
Ask your nearby Link-Belt office or distributor for Folder 2375, or write Link-Belt Company, 220 S. Belmont Ave., Indianapolis 6, Ind.

LINK-BELT
GEARED FLEXIBLE COUPLINGS

▲ For more details circle NED-476 C4 on enclosed inquiry slip ▲

STILL MORE WAYS TO
SQUEEZE PENNIES
OUT OF
UPSET SPECIALS COSTS

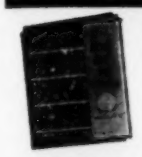
Specially designed upset products are solving thousands of problems. Dozens of design pointers on them are yours for the asking. Send us your sketches, prints, finished products for suggestions.



REPRINTS of this and of previously published charts are available on request for use in drafting and purchasing departments.

QUALITY PROMCO BRAND

MACHINE SCREWS AND SPECIAL FASTENERS ARE OUR BUSINESS

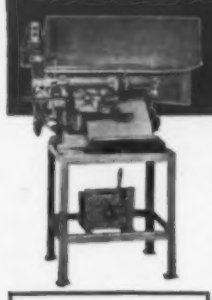


WRITE FOR OUR CATALOG

THE PROGRESSIVE MANUFACTURING COMPANY
46 NORWOOD ST., TORRINGTON, CONN.

▲ For more details circle NED-477 C4 on enclosed inquiry slip ▲

How to CUT AND STRIP INSULATED WIRE... as fast as 3,000 lengths per hour!



ARTOS *Automatic* MACHINES REDUCE TIME AND COST

For quantity production of finished wire leads ... measured, cut to length, and stripped at one or both ends ... investigate Artos Automatic Machines.

The Model CS-6 illustrated can complete up to 3,000 pieces per hour in 15-in. lengths, and other lengths in proportion. You save through combined operations ... through quick, easy set-up ... through unskilled help who can handle this machine. You obtain substantial time savings over the best manual or semi-automatic methods.

Highly accurate machine operation reduces work spoilage to an absolute minimum—errors due to the human element are eliminated. There is no cutting of strands or nicking of solid wire. Uniform lengths and uniform stripping are produced consistently.

MODEL CS-6E CAPACITY

FINISHED PIECES PER HOUR —15 in. lengths, 3000 per hour; 97 in. lengths, 500 per hour.
MAXIMUM STRIPPING LENGTH—1½ in. at each end.
MAXIMUM CUTTING LENGTH—97 in.
MINIMUM CUTTING LENGTH —2 in. (⅞ in. special).
WIRE HANDLED—Solid or stranded single conductor wires, parallel cord, heater cord, service cord, etc.
MAXIMUM WIRE SIZE—No. 10 stranded or No. 12 solid.

WRITE FOR BULLETIN

Get the complete story—write now for Bulletin 35-C on Artos Model CS-6 machines.

Automatic Wire Cutting and Stripping

ARTOS ENGINEERING CO.

2751 S. 28th St. • Milwaukee 46, Wis.

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CAMCAR STOCK TIPS

A request on your letterhead will bring 64-page Standard or 28-page Aircraft Fastener List monthly. Write today!

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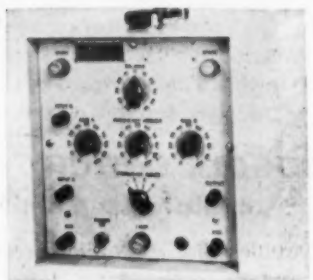
WET BLASTING MACHINE automatic, has rotating work table for parts cleaning and finishing

Designated Pressure Blast Roto-Matic, automatic wet blasting unit is designed for processing such parts as castings, forgings, stampings, extrusions and various plastic and ceramic components. Work is positioned by operator on machine's rotating table. Interior of machine is divided into three chambers, all accessible through inspection doors. First compartment is the blast chamber, second a rinse chamber and the third a drying chamber. Controls are centralized on a front panel.

Table speed is variable, work holding fixtures are readily interchanged and blasting guns are designed for easy repositioning. Unit is of stainless steel construction and has both medium and high velocity blasting circuits. Made by **Cro-Plate Co.**, Dept. N, 747 Windsor St., Hartford 5, Conn.

▲ For more details circle NED-480 C4 on enclosed inquiry slip ▲

PORTABLE ELECTRONIC SWITCH allows two patterns on oscilloscope either super-imposed or separated



Simultaneous observation of two patterns on screen of single cathode-ray oscilloscope for comparing amplitudes, waveforms, frequencies and phase relationships is made possible by portable electronic switch. Patterns can be superimposed or separated. A square-wave voltage is available at output terminals for use as test signal in studying transmission characteristics of vacuum-tube amplifier and other circuits. Generator of this voltage has frequency range variable from 10 to 500 cps and amplitude variable to 30 v.

Switch incorporates direct-coupled amplifiers alternately operative and inoperative at switching rate continuously variable from 10 to 2000 times per second. Frequency response of signal amplifier is within ±1 db from 0 to 5000 cps at full gain. At 25 kc, response is down less than 25 per cent from that at 1 kc. Made by **Chatham Electronics Corp.**, Livingston 6, N. J.

▲ For more details circle NED-481 C4 on enclosed inquiry slip ▲

new **SPRAY NOZZLE REFERENCE MANUAL**

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- to help you improve a spraying operation
- to help you lower a spraying cost

The most complete industrial spray nozzle catalog ever produced. Gives you reference data on thousands of standard and special spray nozzles for every type of spraying.

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SPRAYING SYSTEMS CO.
3211 Randolph St. Bellwood, Illinois

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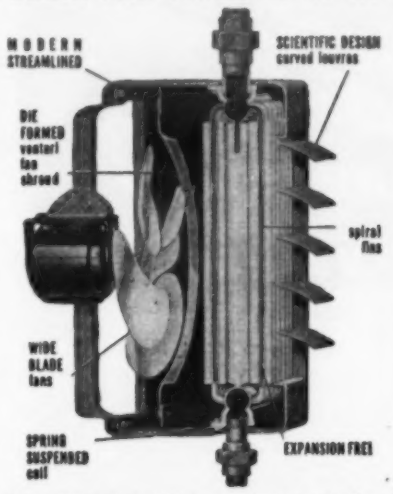
UNIT HEATER . . sets new standard of quietness and heating efficiency

McCord Unit Heaters are a time proven product embodying design based on years of experience in the heat transfer field. These units are not only rugged in design and guaranteed for use on #150 p.s.i. steam pressure but are made attractive in appearance. Two outstanding features appeal to maintenance engineers — we use standard motors with standard bases which quickly permits the use of replacement motors should a motor fail in service — the heating element is made of individual spiral fin tubes which are free to expand independently without putting a strain on the brazed joints. The entire heating unit is spring suspended and floats free in the casing, eliminating rigid connections. Improved type fan blades deliver large volumes of air with minimum air noise and vibration which makes these units suitable for office and store use. A complete line of vertical projection type unit heaters and blast coils are also available. Catalog on request or write for folder. "Instructions for Maintenance of Unit Heaters." **McCord Corporation**, Detroit, Mich. *(Advt.)*



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Brown Boggs Foundry & Machine Co., Ltd., Hamilton, Canada, manufacturers of this 200-ton press, required a v-belt that would give vibrationless full power delivery ... that could be installed quickly and easily. Here's why they selected Veelos:

"...for best operating condition ...for the user's convenience"* Brown Boggs picked Veelos v-belt

Veelos is known as Veelink outside the United States.

**"We feel that our own factory assembly has put this Press in the best operating condition. To eliminate the necessity for dismantling any part of the equipment, and for the user's convenience in changing belts, we have equipped the drive with Veelos V-Belting."*

VEELOS THE LINK V-BELT

Get the full story of Veelos —write today for your free copy of the Veelos Data Book.

MANHEIM MANUFACTURING & BELTING CO.
650 Manheim St., Manheim, Pa.

Adjustable to Any Length • Adaptable to Any Drive

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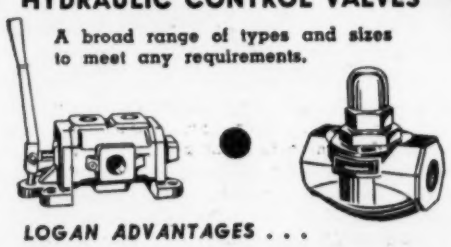
LOGAN AIR AND HYDRAULIC POWER

SPEEDS • COORDINATES • REFINES PRODUCTION IN OVER 10,000 INDUSTRIAL PLANTS

AIR CYLINDERS • AIR-DRAULIC CYLINDERS • AIR and HYDRAULIC PRESSES • COLLET GRIP TUBE FITTINGS • SURE-FLOW COOLANT PUMPS • HYDRAULIC POWER UNITS • HYDRAULIC CYLINDERS • HYDRAULIC CONTROL VALVES • AIR CHUCKS • AIR CONTROL VALVES

Logan HYDRAULIC CONTROL VALVES

A broad range of types and sizes to meet any requirements.



LOGAN ADVANTAGES . . .

- Ease of Installation
- Effortless Operation
- Long-Life Construction
- Unrestricted Porting
- Easy to Service
- Infrequent Maintenance

SAVES TIME Logan AIR AND HYDRAULIC EQUIPMENT EXPORT • MOTION

LOGAN MANUFACTURES 6,975 STANDARD CATALOGED ITEMS • CATALOG ON REQUEST

Let Logan Engineers help you design your Air and Hydraulic Circuits.

LOGANSPORT MACHINE CO., INC.
808 Center Avenue Logansport, Indiana

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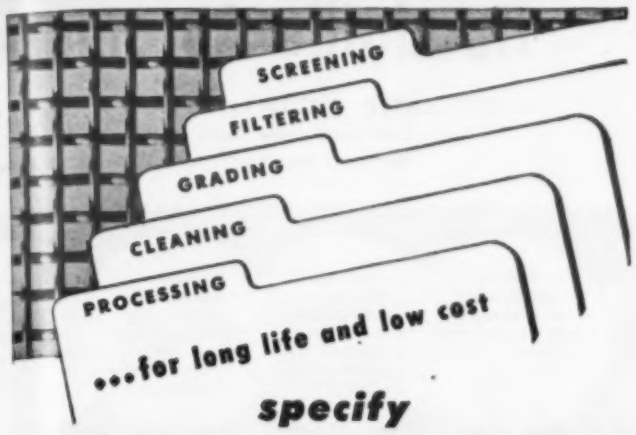

specify

CAL-WIC MESH CLOTH

You'll find CAL-WIC Mesh Cloth available in a wide variety of weaves, weights and meshes... fabricated in various types of metals and alloys for resistance to corrosion, abrasion, or high temperatures.

For original equipment or replacement, investigate the advantage of "precision-made" CAL-WIC Mesh Cloth. Write for further information.

THE COLORADO FUEL AND IRON CORPORATION — Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION — Atlanta • Boston • Buffalo
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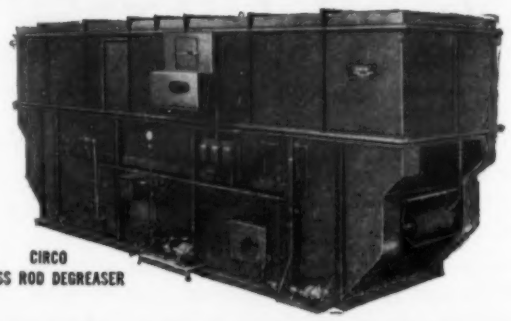
CAL-WIC INDUSTRIAL SCREENS CFI
THE COLORADO FUEL AND IRON CORPORATION

1804

For more details circle NED-486 C4 on enclosed inquiry slip

Circo Vapor Degreasers use 30% less solvent



CIRCO
CROSS ROD DEGREASER

New, modern Circo vapor degreasers — whether large or small — are engineered to save on solvent consumption. Construction features like balanced condensing coils, leak-proof pumps and dual vapor-level control are today saving companies 30% and often more in solvent use. Circo degreasers perform faster, save precious man-hours through engineering designs developed through 30 years experience in vapor degreasing.

Circo Introduces Ultrasonic Cleaning

Write for details on the most modern, talked about metal cleaning development of the century—the Circosonic degreaser that cleans small metal parts by the power of sound.

Send for Circo's comprehensive 32-page Manual on Vapor Degreasing. No Obligation.

SINCE CIRCO 1923

EQUIPMENT COMPANY
126 Central Avenue, Clark (Rahway), New Jersey Offices in Principal Cities

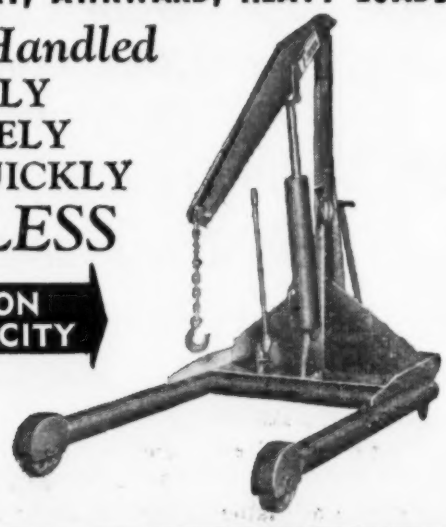
PER-SOLV (Perchlorethylene) CIRCO-SOLV (Trichlorethylene)
Vapor Degreasers • Metal Parts Washers • Dryers • Solvent Recovery Stills

For more details circle NED-487 C4 on enclosed inquiry slip

BULKY, AWKWARD, HEAVY LOADS

Handled
· EASILY
· SAFELY
· QUICKLY
for LESS

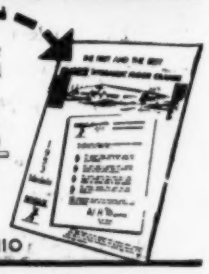
2 TON CAPACITY



SUBSTITUTE FOR AN ELEPHANT®

GET THIS BOOK

Gives all the facts about Ruger's complete line of hydraulic floor and truck mounted cranes, capacities 1000 to 6000 lbs.

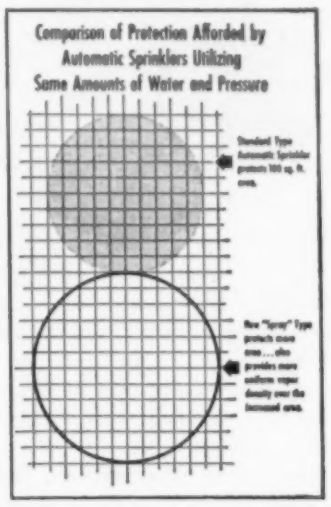


RUGER CRANES

619 West Fourth St. UHRICHSVILLE, OHIO

For more details circle NED-488 C4 on enclosed inquiry slip

AUTOMATIC FIRE SPRINKLER has wide-angle water distribution

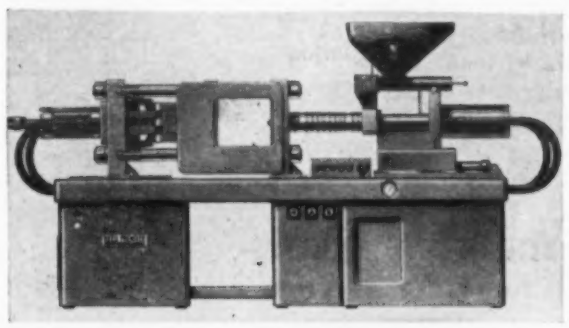


Newly designed deflector in spray type automatic sprinkler for fire extinguishing systems not only affords wide-angle distribution of water, but improves atomization with highly uniform vapor density. Coverage is up to 130 sq ft per sprinkler as compared with 100 sq ft for conventional types. Fusible element made of a solid organic chemical assures sprinkler opening at rated temperatures. These can be 135, 160, 212, 280, 340 and 415° F. Sprinkler is interchangeable with old type without any change in piping and is approved by Underwriters' Laboratories and Factory Mutual Laboratories. Made by **Globe Automatic Sprinkler Co.**, Dept. NED, 2035 Washington Ave., Philadelphia 46, Pa.

For more details circle NED-489 C4 on enclosed inquiry slip

INJECTION MOLDING MACHINE cycle time is 6 seconds

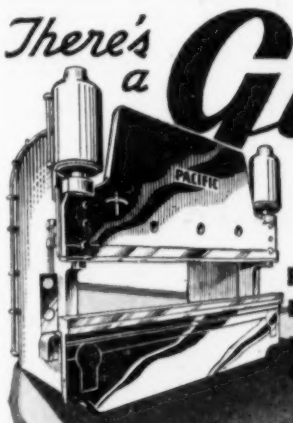
Machine cycle time of 6 seconds permits up to 600 shots an hour on model 175T-4/6 oz plastic injection molding machine. Designed for fast, continuous



molding of small thermoplastic items, unit develops 175 tons mold clamping pressure through its double shear link mechanism. Mold stroke is adjustable between 5 and 8 in. Die plates will accommodate molds up to 24¼ x 13 in., and rated projected casting area in mold is 75 sq in. Maximum mold thickness is 14 in. and minimum is 6 in. Standard stuffing arrangement permits shots of 6 oz or more through multiple strokes, and an optional low pressure die closing unit is available for fast cycle completely automatic work. Plasticizing capacity is 75 lb of material per hour. Dies open at any part of the cycle if rear and front safety doors are opened. Made by **Reed-Prentice Corp.**, Dept. S, 677 Cambridge St., Worcester 4, Mass.

For more details circle NED-490 C4 on enclosed inquiry slip

There's a Giant growing in the West



PACIFIC Press Brakes Now Outsell All Competitors Combined in California and Oregon

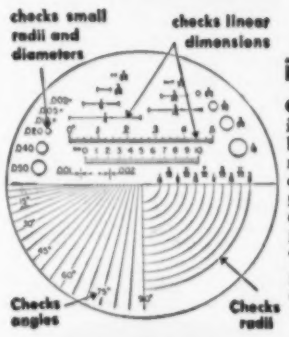
This Revolutionary Hydraulic Press Brake, First Introduced in 1946, Has Gained a Tremendous Acceptance by Western Industry and Is Now Rapidly Casting Its Shadow Across the Entire Nation.

THE PACIFIC is the only modern, advanced press brake designed for 1954—It can't be JAMMED—It can't be OVERLOADED—The stroke length is immediately ADJUSTABLE to match the job; imagine changing from a 1" to a 36" stroke in a few seconds! THE PACIFIC HYDRAULIC PRESS BRAKE is VERSATILE—It can be used for Deep Drawing, Heavy Punching, Air Bending, even Straightening. Custom presses can be delivered in a few weeks. Prices are competitive including freight costs from the West Coast. Sales and service available in all major cities.

PACIFIC INDUSTRIAL MFG. CO.
848 - 49th Avenue - Oakland, Calif.

For more details circle NED-491 C4 on enclosed inquiry slip

THE Original BELL & HOWELL Pocket Comparator



Saves time and money inspecting small dimensions

● Here's *guaranteed* accuracy in checking small dimensions at a price any business can easily afford. Save time and money measuring wear on cutting tools, checking forms and dimensions of punches, dies and gauges—as well as chamfers, threads and small holes on production parts.

Thousands in use by America's leading precision manufacturers. It's the greatest time-saver since the micrometer!

price only $36.00 order today

a product of BELL & HOWELL CO. distributed ONLY by

See Your National Tool Co. Representative or Local Jobber

NATIONAL TOOL CO.

Write for FREE descriptive folder

11210 Madison Avenue Cleveland 2, Ohio

For more details circle NED-492 C4 on enclosed inquiry slip

OHIO KNIFE SLITTER KNIVES AND SHEAR BLADES are preferred by Metal Working Plants and Steel Warehouses

4 ways better... 1. Precision Cutting 2. Less Downtime 3. Less Regrinding 4. Longer Runs Between Grinds

here's why Ohio Knife Co. slitting and shearing knives earned this wide acceptance by reducing "downtime". Production savings are realized because Ohio Knives give longer runs, require less regrinding and deliver precision work even on the toughest jobs. OK Slitter Knives are made from the finest tool steel, precision ground to ± .0002 tolerances on thickness, diameter and bore—closer tolerances available if required. OK Shear Blades are specially heat treated to bring out best characteristics for different jobs, to give maximum toughness and keen edge-holding qualities.

Our engineering department is at your service for recommendations on your slitting and shearing problems. Write Dept. H.

Manufacturers of OK WELDED HIGH SPEED SHEAR BLADES • OK SOLID STEEL SHEAR BLADES • OK SLITTER KNIVES • ROTARY SHEARS, TUBE CUT-OFFS, HARDENED WAYS AND SLIDES

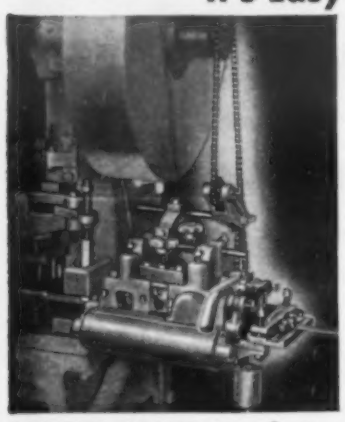
GO WITH OHIO GREEN

THE OHIO KNIFE CO.
CINCINNATI 23, OHIO

For more details circle NED-493 C4 on enclosed inquiry slip

Get RAPID-FIRE PRODUCTION from your PUNCH PRESSES

It's Easy with WITTEK Automatic Roll Feeds



Wittek automatic roll feeds fit all makes and sizes of punch presses — provide maximum efficiency and extreme accuracy in the high speed automatic feeding of strip stock. Made in single roll, double roll, and compound types with straighteners, in models to feed (push or pull) in any direction. Length of feed is easily adjusted to meet individual requirements.

4472

WITTEK Reel Stands

Simplify Handling of Coiled Stock

Choice of standard models to facilitate handling coiled stock . . . from small, light coils to those weighing up to 800 pounds. Larger reel stands automatically center the coils — provide frictional braking action to prevent overrunning, maintain uniform coil slack.

Write for full particulars

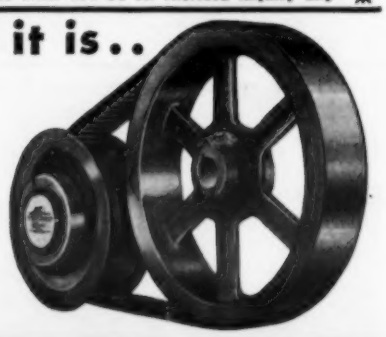
WITTEK Manufacturing Co.

4325 W. 24th Place, Chicago 23, Illinois

Automatic ROLL FEEDS AND REEL STANDS

For more details circle NED-494 C4 on enclosed inquiry slip

here it is..



New VARIABLE SPEED DRIVE

an easy, economical way to vary driven speed

By simply turning an adjusting screw, on either side of the sheave, both flanges move simultaneously and speed changes are obtained quickly and easily. Positive clamping of the two adjustable flanges eliminates fretting corrosion. Single wide range belt for motors 5 to 20 horsepower provides speed range ratios up to 3 to 1 . . . no lubrication . . . less shaft overhang . . . sensibly priced and economical in operation . . . send for Bulletin #796 for detailed information.

T. B. Wood's SONS COMPANY

CHAMBERSBURG, PA.

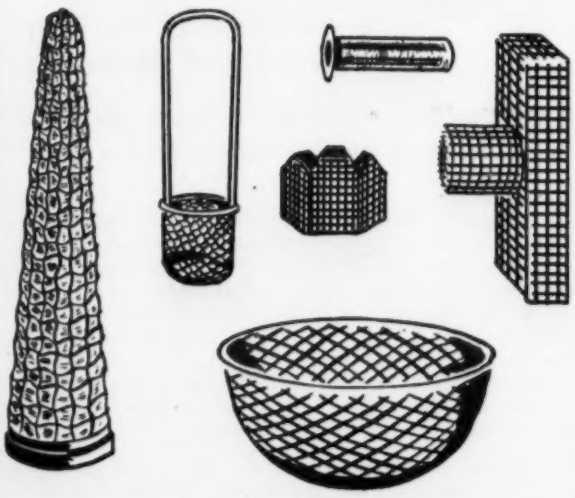
Mechanical Power Transmission Manufacturers—Since 1857.

CAMBRIDGE, MASS. • NEWARK, N. J. • DALLAS, TEXAS • CLEVELAND, O.

For more details circle NED-495 C4 on enclosed inquiry slip

WIRE-MESH PRODUCTS

for all filtering and straining applications. All meshes, all weaves, all alloys.

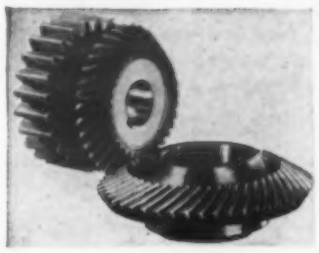


Send Specifications for an estimate. Department 11.

THE C. O. JELLIFF MANUFACTURING CORP. SOUTHPORT, CONN.

For more details circle NED-496 C4 on enclosed inquiry slip

COPPER PLATED GEARS resist corrosion, break in fast

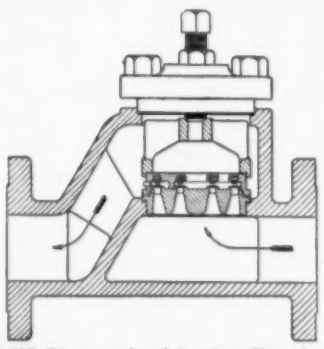


Thin copper plating applied to Brad Foote gears prevents corrosion before gears are put into service and eliminates need for greasing and cleaning. Plating is not removed before use, but instead promotes fast smooth break-in because of the gentle lapping action of the copper film. Gears over 30-in. diameter are protected by copper-colored water-soluble paint, which again does not need to be removed before use. Internal parts of assemblies and transmissions are not plated or painted. Copper protection is now standard at no extra cost on gears made by **Brad Foote Gear Works, Inc.,** 1301-G S. Cicero Ave., Cicero 50, Ill.

For more details circle NED-497 C4 on enclosed inquiry slip

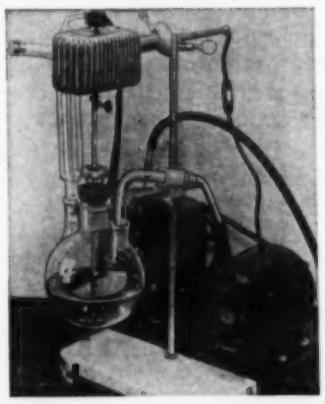
CHECK VALVES for up to 500 psig air

Now available for air line service conditions up to 500 psig, Airchek check valves are designed for installation in the discharge lines of air and gas compressors. They check down-time, noise, vibration and tank ring, and can be used to replace stop and safety valves. They are automatic and quiet in operation. Made by **Pennsylvania Pump & Compressor Co.,** 14 Bushkill Dr., Easton, Pa.



For more details circle NED-498 C4 on enclosed inquiry slip

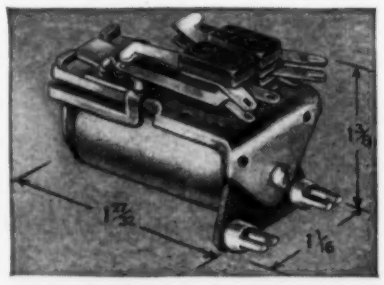
LABORATORY MIXER for closed-system use



Designed for closed-system laboratory mixing, Vibro-Mixer is of the nonrotating type. A totally-enclosed motor vibrates a shaft attached to the stirrer 120 times a second, over a stroke range adjustable between 0.2 and 2 millimeters. Mixer lends itself to operation under pressure or vacuum. Mixers have upward or downward-tapering holes which concentrate flow force and achieve complete interfacial mixing without vortex or stratification. Unit is suitable for preparation of emulsions and stable colloidal formations, since it disintegrates globules of suspended fats, oils, and finely-divided solids. Made by **Fisher Scientific Co.,** 715 Forbes St., Pittsburgh 19, Pa.

For more details circle NED-499 C4 on enclosed inquiry slip

PRECISION MINIATURE RELAYS for low wattage sensitive uses



Series of versatile telephone type relays, designated as Class 22 and furnished in variety of hermetically sealed and dust-tight enclosures, is adaptable to low wattage sensitive applications, or to requirements where one relay must perform many switching functions with minimum input power. Units can be furnished with resistance to shock, vibration and temperature variations. Coil and contact spring terminals at mounting end facilitate concealed wiring of either individually or strip mounted relays. Units are available for any voltage up to 440-v ac or up to 230-v dc and can be furnished with single or twin contacts, snap-action contacts, coil resistance from 0.12 to 21,000 ohms, and time delay—slow release to 125 milliseconds. Made by **Magnecraft Electric Co.,** 1442-G W. Van Buren St., Chicago 7, Ill.

For more details circle NED-500 C4 on enclosed inquiry slip

Houdaille Automatic

AUTOMATIC • CONTINUOUS • Collects, Tr... and Discharges Solid or Fibrous Materials—... Working Chips, Powders, Dust, Scale, etc.—Wet ...

Tubular or open flights carry any materials which settle to bottom of tanks or hoppers . . . continuous or intermittent operation

Unlimited applications . . . readily adaptable to almost any space or traverse requirement ...standard pipe sizes —3", 4", 6", 8"

System eliminates costly manual handling methods, speeds up production, pays for itself in maintenance savings alone

Each Houdaille Conv... ing System "tailo... ally engineered" ... Hanan-Crane ... your particular ... varying problem

Houdaille Conveyor System removes chips from broaching machines in large aircraft plant. Operating automatically and continuously, each conveyor services a single machine. Chains and flights travel nine feet below floor level, use minimum floor space.

For more details circle NE...

NEW ANGLES on speedier materials handling

LOOK how conveniently these rugged Union Metal steel boxes are spaced and stacked . . . always an easy, *faster* operation thanks to Union Metal's improved tiering-fork-crane features.

Here, angle placement not only cuts aisle width, but simplifies and speeds up handling with fork lift trucks. And, tiered 4-high, these Union Metal boxes make safe, practical use of "air space", too—mighty important where valuable storage space must be utilized fully.

For *many* a good "angle" on handling *more* material *faster,* send for Union Metal Catalog No. 77. It tells all about the unusual skid-box-pallet features that today contribute to better handling techniques in plants everywhere. Write to The Union Metal Manufacturing Company, Canton 5, Ohio.

UNION METAL

Materials Handling Equipment

For more details circle NE...

REPLACE WITH THIS SPHERI... from SKF and get the ONLY AVAILABLE DE... that gives you

2 to 3½ times increased service life

25% to 50% increased capacity

That's right—your SKF Distributor can *show* ... why this SKF improvement in spherical roller b... ing design, size for size, will last 2 to 3½ times as l... and provide up to 50% more capacity than any o... design available . . . at no extra cost.

Or, if you prefer, write for SKF Bulletin No. 36... which contains complete technical data, and ... available of the "C" Spherical Roller Bearing.

SKF INDUSTRIES, INC., PHILADELPHIA 32, ...

—manufacturers of SKF *and* HESS-BRIGHT *bearings.*

"C" Spherical Roller Bearings Are Carried By SKF ... *tributors Located From Coast To Coast.*

For more details circle N...

Write on company letterhead for 30-page catalog giving complete details on engineering features, capacities, typical applications and case histories of Houdaille Automatic Conveyors.

MAN-CRANE CORP., 405 WABASH AVENUE, LEBANON, IND.
a subsidiary of
HOUDAILLE-HERSHEY CORP.

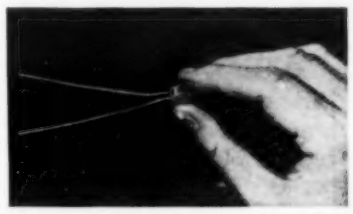
▲ For more details circle NED-504 C4 on enclosed inquiry slip ▲

BLOWING & EXHAUSTING FANS
volumes up to 2124 and 335 cfm

Large volume (LV) and pressure blower (PB) fans, the former suited for laboratory hood exhaust and the latter used in industrial process work to supply or exhaust air, are now available. The LV type is offered in four sizes with welded forward-curved wheel which is both statically and dynamically balanced. PB type utilizes radial-bladed wheel of aluminum alloy. Both fans are supplied with standard motors, and all single phase fractional sizes are usually resilient mounted. Volumes for type LV range up to 2124 cfm and static pressures to 1½ in.; for type PB, up to 335 cfm and static pressures to 4 in. Both types are furnished for 90-degree adjustment only as to position of discharge. Made by **Chicago Blower Corp.**, 4501-NE Ravenswood Ave., Chicago 40, Ill.

▲ For more details circle NED-504 C4 on enclosed inquiry slip ▲

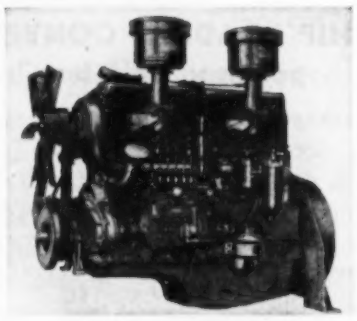
WIRE WOUND RESISTOR
subminiature, hermetically sealed



Values up to 60 K – 0.1 per cent are provided by the the Runt subminiature wire wound resistor which measures ¼ x ¼ in. and is cataloged as the NM-2. Unit is hermetically sealed to withstand the most severe environmental conditions. Made by **Eastern Precision Resistor Corp.**, 130-12 90th Ave., Richmond Hill 18, L. I., N. Y.

▲ For more details circle NED-505 C4 on enclosed inquiry slip ▲

DIESEL ENGINES
produce 217.5 and 185 hp



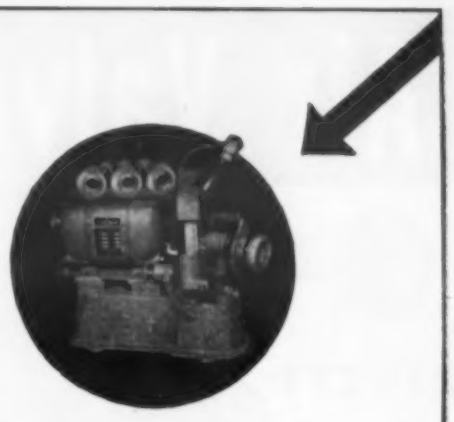
Six-cylinder diesel engines of four-cycle overhead valve type are available in transportation and stationary industrial types producing 217.5 and 185 hp respectively at governed speeds of 2200 and 1800 rpm. Overhead valve design simplifies maintenance and permits use of exchange cylinder head assemblies. Special combustion chamber provides high mixture turbulence and reduces initial shock from combustion, thus permitting stress parts such as block, connecting rods and crankshaft to be considerably lighter than those of conventional engines. Maximum torque of the 185 hp engine is 592 lb-ft. Engines have full-pressure lubrication, removable cylinder liners and seven bearing drop forged crankshaft. Made by **Continental Motors Corp.**, Dept. 1, 205 W. Market St., Muskegon, Mich.

▲ For more details circle NED-506 C4 on enclosed inquiry slip ▲

AMPLIFIER
for audio and ultrasonic frequencies

General-purpose type 1206-B laboratory amplifier has frequency range extending from below 10 cycles to about 250 kc, so that both low and high frequency signals can be handled. With a maximum output of 3 w, it is adequate for driving many low-power transducers. Since less than 1 v input is required for full output, it can operate directly from many electro-acoustic and electro-mechanical devices such as sound level and vibration meters for such purposes as operating graphic recorders. Harmonic distortion of the amplifier into a load of 600 ohms is less than 1 per cent with 2 w output from 20 cycles to 40 kc. This performance is obtained by the single-ended push-pull circuit which does not require an output transformer. Made by **General Radio Co.**, Massachusetts Ave. & Front St., Cambridge 39, Mass.

▲ For more details circle NED-507 C4 on enclosed inquiry slip ▲



THE ONLY DRILL GRINDER SO FAST & EASY TO OPERATE!

Only the *Black Diamond* Drill Grinder lets you sharpen small drills accurately by such a simple grinding method. Fast, easy operation. No complicated adjustments. Compare these outstanding features:

- Exclusive "positive-positioning" assures accuracy!
- No skill required by operator!
- Both lips ground in one operation!
- Web thinning made easy with special attachment!

Get all the details! Send for folder!

BLACK DIAMOND SAW & MACHINE WORKS, INC.
72 North Ave., Natick, Mass. OLympic 3-4480

▲ For more details circle NED-508 C4 on enclosed inquiry slip ▲

Now you can...

SPRAY HOT WAXES

with Sta-Warm electrically heated spray gun assembly, flexible heated hose and pressure tank.

Many users of melted waxes have wanted to spray-coat the interiors of various metal, wood or fibre containers. You can do this with the new Sta-Warm wax spraying equipment. The economies are numerous in material saved, speed of processing and selection of areas to be coated.

Inquire today ▶ outlining your current problem.

Sta-Warm ELECTRIC CO.
130 N. CHESTNUT ST., RAVENNA, OHIO

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Specify CONTINENTAL

UST IDLERS

- UNIT-SEALED
- TIMKEN BEARINGS
- PRE-LUBRICATED

Saves GREASE! Saves LABOR! Saves BELTS!
If you use belt conveyors—you need Continental Idlers!
Write for Bulletin NED-116
ALL SIZES! ALL TYPES! CG-5302

INDUSTRIAL DIVISION
CONTINENTAL GIN COMPANY
Birmingham 2, Ala.
ATLANTA • DALLAS • MEMPHIS • NEW YORK

▲ For more details circle NED-510 C4 on enclosed inquiry slip ▲

SKF®
BALL AND ROLLER BEARINGS

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Air Valves

RIVETT OFFERS **19** models for individual air needs!

MODEL 2100

You can get the required size and type air valve from Rivett! Suitable for pressures up to 150 P.S.I., Rivett 4-way valves are available in 5 types of operation: hand, foot, cam, solenoid, and pilot. Five sizes: 1/4", 3/8", 1/2", 3/4" and 1". Pilot valves in side and foot mountings—and in palm, push button, cam, foot and solenoid operation.

Write for Catalog Section 302 showing specifications and drawings of Rivett air valves.

RIVETT LATHE & GRINDER INC.

Brighton 35, Boston, Mass., Department NED-3

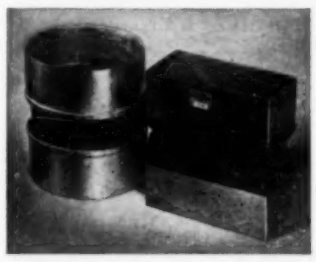
For more details circle NED-511 C4 on enclosed inquiry slip

DISPENSER
for oil absorbent material

Occupying only 2¼ sq ft of floor space, this dispenser for Oil-Dri absorbents is built of steel and has a 150-lb capacity. Operation is based on a slot-type release which automatically drops absorbent to the floor of the dispenser where it can be scooped up in the desired quantity to clean an oil spill. Self-contained unit has a side bracket for scoop or shovel. Screen mounted on the top enables Oil-Dri absorbents to be reused, as it filters out steel chips, scraps, paper and other foreign materials. Available from **Oil-Dri Corp. of America,** Dept. ND, 520 N. Michigan Ave., Chicago 11, Ill.

For more details circle NED-514 C4 on enclosed inquiry slip

FLEXIBLE DUCT CONNECTION
eliminates vibration noise



Feature of Silent Duct flexible duct connection which eliminates vibration noise is that metal and material are factory-assembled into single unit. Duct is delivered in 100-ft coils inside carton which serves as handy dispenser. It lies perfectly flat and is ready to cut, bend and seam. Silent Duct is made of 24-gage galvanized steel permanently fastened to canvas that is fire, water and mildew resistant. It is also available with heavy nonporous asbestos. Made by **Elgen Mfg. Corp.,** Dept. D-3, 41-34 39th St., Long Island City 4, N. Y.

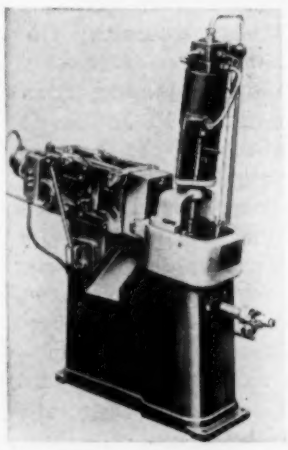
For more details circle NED-515 C4 on enclosed inquiry slip

SHIP LOADING CONVEYOR
package unit has hydraulic lift

Packaged merchandise can be conveyed directly from the dock to the top of a ship or to its loading ports by the Shiploader conveyor. Vessel loading is accomplished in considerably less time than by present methods. Conveyor is portable and equipped with hydraulic lift and pushbutton control. Of all steel weatherproof construction, it has adjustable height and can be operated to feed to right or left or at right angle to the ship. Capacity is 60 tons per hour. Made by **Wehle Conveyor Co.,** 203 Water St., Binghamton, N. Y.

For more details circle NED-516 C4 on enclosed inquiry slip

DIE CASTING MACHINE
die unit can be completely removed



An independent die unit which can be completely removed from machine is one feature of the IMP/96 die casting machine. Operator can thus install in few minutes a spare die unit which already has die mounted on it. The continuous operation which can be attained through use of this die unit, together with machine's rapid cycle (800 to 1000 shots per hour) permit use of low cost single or two cavity dies to meet production requirements. In order to hold shot of the Impact Injection, toggles have been redesigned and made more massive so that lock is now 24,000 lb. Made by **DCMT Sales Corp.,** Dept. NE, 164 Duane St., New York 13, N. Y.

For more details circle NED-517 C4 on enclosed inquiry slip

For more details circle NED-518 C4 on enclosed inquiry slip

WAYNE *Production-Booster* HOSE REELS

EASY TO USE: Pull tool or spray gun to required hose length . . . it locks firmly. Slight pull releases catch and hose rolls back automatically to predetermined setting—just like a window shade!

HANDY TO USE: Tools are out of the way but always within easy reach. Mounts in any position, permits centrally located tool for use by several operators, or one. Saves working space, too.

WORK-SAVING: Cuts waste motion, lessens worker fatigue, widens work-radius. Finger-tip control of tools. Quick installation, easy adjustment, simple maintenance.

Besides all this, the Wayne Hose Reel saves wear and tear on your hose, reduces drop-breakage of tools, prevents accidents caused by loose hose.

Write for illustrated data folders on cost-cutting, job-engineered Wayne Production-Booster Hose Reels.

Compare These Wayne Advantages

Automatic Rewind
Rubber Bumper Stop
Hose I.D. Sizes, ¼", ⅜", ½"
Powerful Spring Motor
Constant Spring Tension
Rugged Steel Construction
Open or drum-type Models
Automatic Brake
Universal Bracket
Hose Lengths, 15' to 50'

INDUSTRIAL HOSE REELS for Air, Water, Grease, Oil, Fluids

Wayne NATION WIDE SERVICE

THE WAYNE PUMP COMPANY
SALISBURY, MARYLAND
TORONTO, CANADA

For more details circle NED-512 C4 on enclosed inquiry slip

standardize on standard

UNBRAKO®

SOCKET CAP SCREWS

Knurled heads for sure finger grip and fast assembly; accurate hex sockets for positive, non-slip internal wrenching; made of heat treated alloy steels. Fully formed threads, Class 3 fit. Controlled fillet and continuous grain flow assure unusual strength. Available in standard sizes from #4 to 1" in a full range of lengths. Stocked by your local industrial distributor. To save time and money, write for UNBRAKO Standards. STANDARD PRESSED STEEL Co., Jenkintown 24, Pa.

UNBRAKO SOCKET SCREW DIVISION SPS JENKINTOWN PENNSYLVANIA

For more details circle NED-513 C4 on enclosed inquiry slip

Those Who Know High-Speed Photography Best Select *FASTAX...*

THE CAMERA WITH ALL THE FIRSTS!

- FIRST with a combination oscillographic and high-speed motion picture camera with no superimposed images.
- FIRST with 400' capacity camera.
- FIRST with 500' full frame 35mm high-speed camera.
- FIRST to modify high-speed cameras to meet specific uses.
- FIRST with complete line of lenses for high-speed camera . . . focal lengths from 3.2mm to 80".
- FIRST with a very high-speed, low-grain size film . . . FASTAX Type 931 . . . made for Wollensak by Du Pont Photo Products Division.
- FIRST with auxiliary equipment.
- FIRST with a light source designed for high-speed photography . . . FASTLITES.
- FIRST with a course in the use of high-speed cameras at no cost to engineers.
- FIRST in high acceleration cameras . . . reach picture-taking speed the fastest.

WHEN YOU BUY *FASTAX* YOU BUY FIRST QUALITY AND SERVICE

For more detailed information write to Wollensak Optical Company, 850 Hudson Avenue, Rochester 21, New York.

MASTERPIECES by WOLLENSAK

For more details circle NED-519 C4 on enclosed inquiry slip

Put this HELP to work on your TOOL and DIE STEEL PROBLEMS

This new 189-page Carpenter Matched Tool and Die Steel Manual can help you cut production costs and boost output. It can help you get tools that provide the properties you need on each job.

- Greater Wear Resistance
- Greater Toughness
- Greater Hardening Accuracy and Safety
- Red-Hardness

This Manual also contains an 80-page Tool Index and Steel Selector that quickly points to the proper tool steels for various types of tools. Send for your copy today by writing on your company letterhead and indicating your title. This useful information is free to tool steel users in the U.S.A.

The Carpenter Steel Co., 118 W. Bern St., Reading, Pa.

For more details circle **NED-520 C4** on enclosed inquiry slip

ELASTICONE® GUIDE PIN COVERS

CUT DIE COSTS 25%

Low-costing Elasticone Guide Pin Covers reduce die breakage; protect man & machine — closes the gap between pins and bushings.

Just snaps into place—no installation costs. Manufactured in stock sizes.

Write for full information and literature.

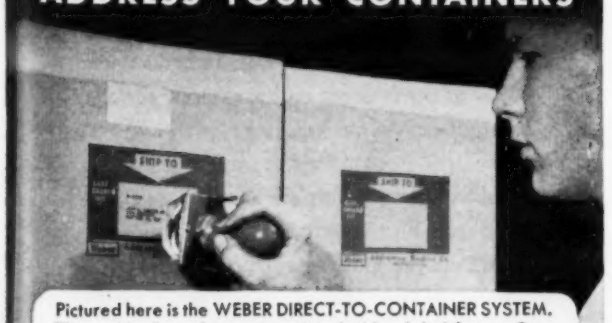
CENTRAL

2208 EAST HUNTINGDON ST. PHILA. 25, PA.

CENTRAL SAFETY EQUIPMENT COMPANY

For more details circle **NED-521 C4** on enclosed inquiry slip

THE FASTEST, EASIEST WAY TO ADDRESS YOUR CONTAINERS



Pictured here is the WEBER DIRECT-TO-CONTAINER SYSTEM. The cartons have been pre-printed with a label frame. Consignee's address is printed inside the frames with a WEBER RJ-1 hand printer at the rate of 40 to 50 cartons per minute. Eliminates labels. Faster, neater than brush stenciling. The RJ-1 prints from stencil easily prepared on typewriter. Reservoir holds enough ink for 7,500 to 10,000 prints. Can be supplied with one or two counters for quantity check.

MODEL RJ-1 $14.50 WITH SUPPLIES.

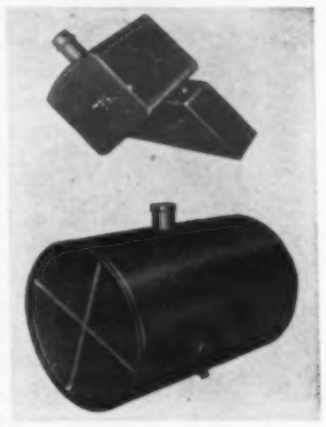
SEND FOR FOLDER ON THE RJ-1 HAND PRINTER AND DIRECT-TO-CONTAINER SYSTEM

Weber Label and Marking Systems, Div.—Weber Addressing Machine Co., Dept. NE-7 Mt. Prospect, Ill.

another **Weber** *system*

For more details circle **NED-522 C4** on enclosed inquiry slip

FUEL TANKS
available in 1 to 50-gallon sizes



Series of vibration-tested fuel tanks includes 1 through 50-gallon capacities. They are of welded construction from either cold-rolled steel or terne plate. Tanks from 10 to 16-gage are arc-welded. Resistance type seam welding is used for 16 to 24-gage. Series is available in a variety of shapes and sizes. Thirty and two-gallon units are illustrated. Both of these are fabricated from 16-gage steel. Made by **Crenlo, Inc.,** Dept. KP, 1426 Third Ave. N.W., Rochester, Minn.

For more details circle **NED-523 C4** on enclosed inquiry slip

TANK THERMOMETER
features one-piece cup case

One-piece cup case molded of heat-resistant plastic is feature of the Scoop-Master tank thermometer. Low thermal conductivity of the nonsparking insulating-type plastic case assures maintenance of sample temperature. It resists chemical action of petroleum products and aromatic hydrocarbons and is easily cleaned for testing different products. Scale is engraved on wide bore tubing for easy reading. Tube is held by spring slips, quickly replaced without tools. Cup capacity of 120 milliliters meets API and ASTM requirements. Made by **Weksler Thermometer Corp.,** 49a W. 32nd St., New York 1, N. Y.

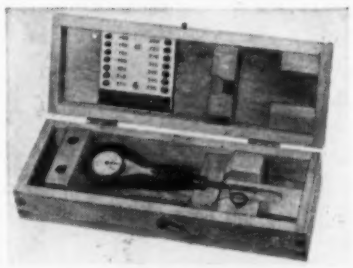
For more details circle **NED-524 C4** on enclosed inquiry slip

INSTRUMENT BEARING
design has multiple improvements

Designed for use in gyroscopes and other instruments, Micro R2 bearing is developed from the previous R2 type and has many design improvements. Ribbon-type, balanced, cone-controlled retainer cannot wind up, hang up or fall out. It results in low starting torque requirements and also makes possible high operating speeds. New bearing has been tested up to 90,000 rpm. Flange type units with straight OD provide simplified housings, mounting and solid seating. Bearing is also available in stainless steel and in angular construction with phenolic retainer. Tolerances are ABEC5 to ABEC7 and better. Made by **New Hampshire Ball Bearings, Inc.,** Grove St. A, Peterborough, N. H.

For more details circle **NED-525 C4** on enclosed inquiry slip

DIAL BORE GAGES
measure bores down to 1/8-in.



Two dial gages for measuring small bores employ the centering-size disk principle whereby a removable disk of nearly bore size centralizes the head and at the same time serves as one of the contacts. Gage No. 000 covers a range from 1/4 down to 3/16-in. and No. 0000 has a range of 3/16 to 1/8-in. Gages hold their setting and can be changed from one bore size to another by locking another disk in position. They can be used as a "one-hole" model for specific applications, or as general purpose instruments with a set of the disks. There are 14 disks for the No. 000 gage and 27 for the No. 0000 gage. Indicators of both gages are graduated in 0.0001-in. Smaller gage checks to within 0.050-in. of bottom of a blind hole, and the other to within 1/16-in. Made by **Standard Gage Co.,** 200 Parker Ave., Poughkeepsie, N. Y.

For more details circle **NED-526 C4** on enclosed inquiry slip

Dependable

MEASURING & CHECKING EQUIPMENT

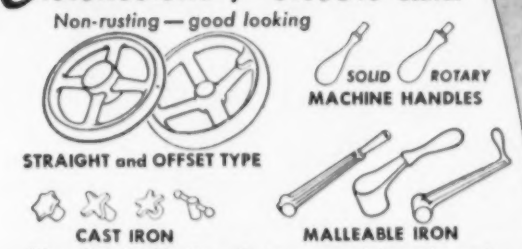
and Now

Send for Complete Catalog

HAND WHEELS, KNOBS, HANDLES

Cadmium Plated READY TO DELIVER

Non-rusting — good looking



We also build jigs, fixtures, special tools and machinery. Send us your blueprints.

MACHINE PRODUCTS CORPORATION
6771 E. McNichols Rd. Dept. B Detroit 12, Mich.

For more details circle **NED-527 C4** on enclosed inquiry slip

Uncle Sam gets MORE than his money's worth . . . with

MASTIPAVE

PABCO's *super-tough, non-slip, resilient, low-cost*

FLOOR COVERING

Why has Uncle Sam, like private industry, purchased millions of yards of Pabco MASTIPAVE? Because Army and Navy installations, barracks, offices, hospitals, warehouses, require floor covering that can take the grueling kick, scrape and scruff of day-in, day-out destructive use. MASTIPAVE will prove to you in *dollar savings* why it is America's Number One low-cost, long-life floor covering. In rolls and tiles. Terra Cotta and Black. For full information on MASTIPAVE...

FILL OUT THIS COUPON

PABCO

PABCO PRODUCTS INC.
New York 16 • Chicago 54 • San Francisco 19
(Mail to Dept. B nearest office)

GENTLEMEN: Without cost or obligation to me, please send your folder, "Every Building needs Pabco MASTIPAVE."

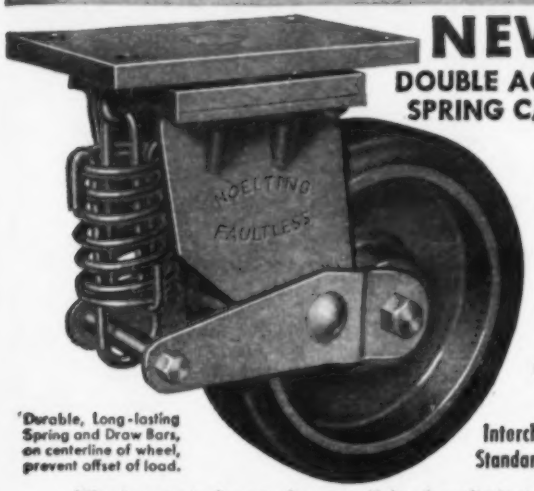
NAME _____

ADDRESS _____

CITY _____ STATE _____

For more details circle **NED-528 C4** on enclosed inquiry slip

HOELTING
Faultless ENGINEERED TRUCK CASTERS
CUT HANDLING COSTS



NEW!
DOUBLE ACTION SPRING CASTER

Doubles Caster Life and Service
Swivel and Rigid Units
Interchangeable Standard Wheels
Durable, Long-lasting Spring and Draw Bars, on centerline of wheel, prevent offset of load.

Wheel contacts floor surface at all levels—eliminates bounce—doesn't raise truck when mounting obstacles.
Write for descriptive literature, no obligation.

FAULTLESS CASTER CORPORATION
Dept. NE, Evansville 7, Indiana
Branches in Principal Cities—Canada Factory: Stratford, Ont.

▲ For more details circle NED-529 C4 on enclosed inquiry slip ▲

NOW...Underwriters' Laboratories Approved
Automatic ELECTRIC TRUCKS
for semi-hazardous and hazardous locations

"101" Transporter—Type EE Approved for Class 1 & 2, Division 2 Areas

TYPE EE—UL-approved for semi-hazardous locations
TYPE EX—UL-approved for hazardous locations

Electrical industrial trucks UL-approved for use in semi-hazardous locations are now available. They include Automatic Transporters, Transtractors, and Transtackers equipped with Type EE sparkproof and dustproof protection.

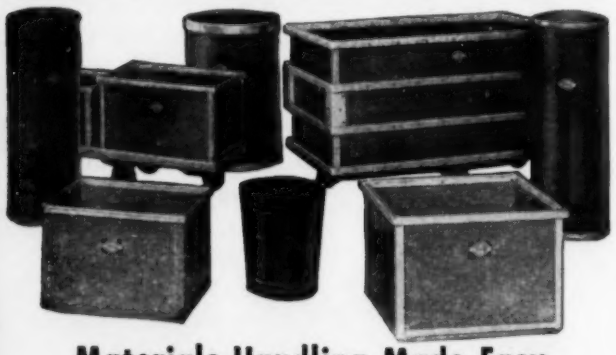
Automatic has also been given UL Approval for Type EX, HF Skylifts—in 2,000, 3,000, and 4,000 pound capacities for use in hazardous locations involving fire and explosion.

If your materials handling involves these designated areas, a UL-approved Automatic truck is your answer.

Write today for full information!

Automatic 101 West 87th St., Dept. C-4 Chicago 20, Illinois
WORLD'S LARGEST EXCLUSIVE BUILDERS OF ELECTRIC-DRIVEN INDUSTRIAL TRUCKS

▲ For more details circle NED-530 C4 on enclosed inquiry slip ▲



Materials Handling Made Easy

Simplify the storage and handling of your materials with Spaulding Fibre Receptacles. They're tough, light weight, shock-proof, resistant to impact and abrasion, will not splinter or corrode.

The Spaulding line includes boxes, baskets, barrels, trays, and trucks of all types. Most can be made to your order in the size and weight best suited to your needs. Send coupon for catalog today.

Spaulding

SPAULDING FIBRE CO., INC., Dover, N. H.
Please send me by return mail your catalog on Spaulding's complete line of Fibre receptacles.

Name
Firm
Address
City Zone State

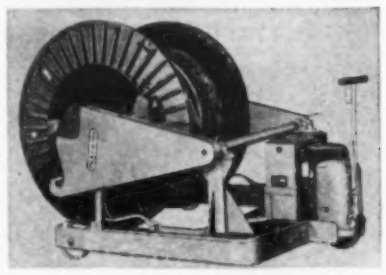
▲ For more details circle NED-531 C4 on enclosed inquiry slip ▲

PRECISION HAND GRINDER is continuous-duty rated

Powered by a 1/10-hp continuous-duty rated universal motor, Super-10 Handgrinder is designed for tool and die as well as production bench work. It has speeds up to 22,000 rpm and swings vitrified wheels up to 1-in. diameter. Its overall length, including chuck, is 10¼ in., body diameter is 2 7/16 in. and small diameter is 1 5/16 in. Complete with cord it weighs approximately 3 lb. Made by **Dumore Co.,** 1370 Seventeenth St., Racine, Wis.

▲ For more details circle NED-532 C4 on enclosed inquiry slip ▲

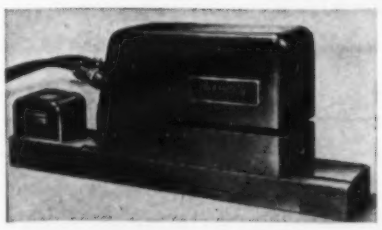
REEL HANDLING TRUCK handles rolls up to 84-in. diameter



Reel handling truck has electric hydraulic lift of 14 in., capacity of 16,000 lb and will handle rolls up to 84-in. diameter. It is designed for general factory and warehouse use and can be used as a stand for rolling or unrolling reels. Travel speed is 2½ to 3 mph with two speeds for forward and backward movement. Powered by an 18-v battery, unit has roller grip controls and push button hydraulic lift system. "Dead Man" controls are standard, with automotive type brake applied to the drive wheel. "Walkie" type design affords minimum turning radius. Made by **Moto-Truc Co.,** 1961 E. 59th St., Cleveland 3, O.

▲ For more details circle NED-533 C4 on enclosed inquiry slip ▲

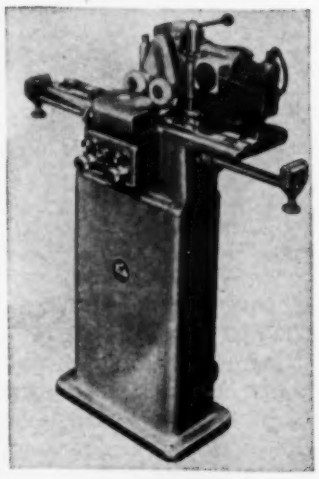
STRIP MEASURING GAGE for small cold reduction mills



Designed to measure strip thickness on small compact cold reduction mills, AccuRay radiation gage has a measurement range from 0.00005 to 0.060-in. Compact measuring unit is 26 in. long and is positioned by a lead screw mechanism enabling it to traverse strip up to 6-in. wide. It is of the non-contacting type, and incorporates a mechanism which automatically compensates for such variables as temperature, humidity and dust collection on the radiation window. This eliminates need for manual standardization of the gage using standard samples. Recording console used with the unit provides a permanent record of each coil reduction and permits extreme flexibility for the setting of thickness ranges. Made by **Industrial Nucleonics Corp.,** Dept. 11, 1205 Chesapeake Ave., Columbus 12, O.

▲ For more details circle NED-534 C4 on enclosed inquiry slip ▲

WOODWORKING MOLDER 2-spindle unit has automatic feed



Available in bench and floor models, two-spindle woodworking molding machine has automatic feed and will produce all types of bars such as louver boards, rungs and moldings. Work can be passed through the machine in the same rough state that it comes from the ripsaw and does not require finish sanding. Wood formerly wasted because of shortness can be used because power feed eliminates dangerous approach to the tools. Machine will mold stock on both sides at 25 and 50 fpm. It is set by scales, has a 2¼-hp motor and features quick change cutters. Made by **Festo Woodworking Machine Co.,** Dept. NED, 745 51st St., Brooklyn 20, N. Y.

▲ For more details circle NED-535 C4 on enclosed inquiry slip ▲

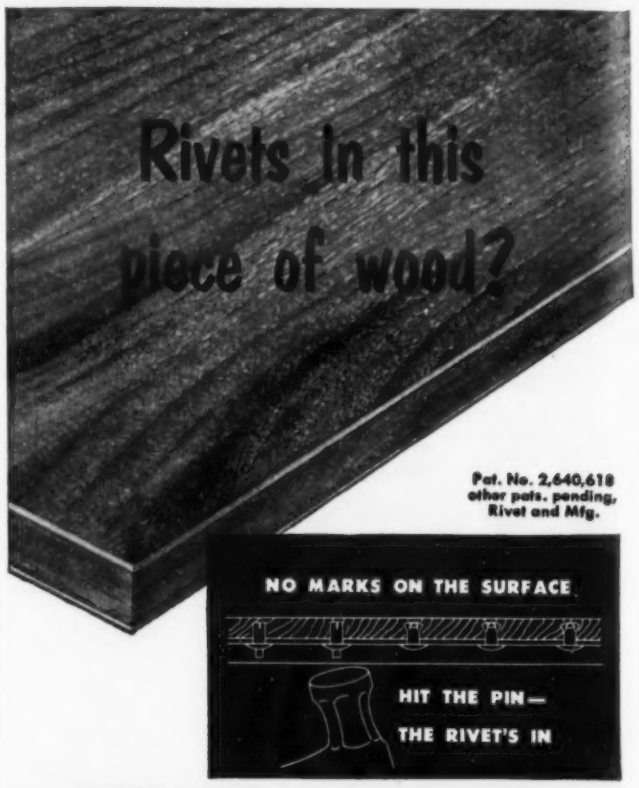
POWER BILLS CUT!
New Wiring Avoided!

As proved in thousands of installations, Sprague Power Factor Capacitors installed *right at each piece of inductive electrical equipment* insure maximum power cost savings, guarantee maximum cost-saving flexibility for future moves and expansion. Power factor on each piece of equipment is corrected *to the maximum.* Changes or additions can be made as *they are required.* New wiring, new switch gear, new transformers can be avoided. *Existing electrical circuits can handle bigger loads.*

Write for 28-page POWER FACTOR CORRECTION GUIDE
SPRAGUE ELECTRIC COMPANY, North Adams, Mass.

SPRAGUE POWER FACTOR CAPACITORS

▲ For more details circle NED-536 C4 on enclosed inquiry slip ▲



SOUTHCO DRIVE RIVETS
DON'T MAR THE SURFACE

When fastening metal to wood with Southco Drive Rivets, a blind head forms *inside* the wood to provide firm holding power even in thin sections. Since nothing projects through the wood, there is no evidence of the fastener on the exterior surface . . . and, of course, no finishing operations are required.

Southco Drive Rivets are installed quickly . . . just hit the pin with a hammer. They won't vibrate loose or twist out. There is no problem of over or under driving, and powerful pull-up forces hold parts firmly together.

Get the complete story on Southco Drive Rivets. Write Southco Division
South Chester Corporation
1413 Finance Building, Philadelphia 2, Pa.

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SOUTHCO FASTENERS
PAWL • SCREW AND SPRING • DRIVE RIVETS
ANCHOR NUTS • ENGINEERED SPECIALTIES
OFFICES IN PRINCIPAL CITIES
WHEREVER TWO OR MORE PARTS ARE FASTENED TOGETHER; STANDARD AND SPECIAL DESIGNS FOR IMPROVED PERFORMANCE AND LOWER PRODUCTION COSTS

▲ For more details circle NED-537 C4 on enclosed inquiry slip ▲

Reduce Water Bills and Maintenance Costs With Dependable LESLIE Thermostats

Specially designed for cooling water service with greatly increased throttling range

It is a recognized fact that water cooled equipment, performs better and requires less maintenance if cooling water temperature is accurately maintained. The LESLIE Thermostat and Diaphragm Regulating Valve make an ideal Temperature Controller for this service.

Features

THROTTLING RANGE-
BI-METALLIC ELEMENT
SIMPLE-
RUGGED, RELIABLE

Send for - Technical Data Sheet 464-14

LESLIE Thermostats with 32° —400° F adjustable range and with calibrated dial.

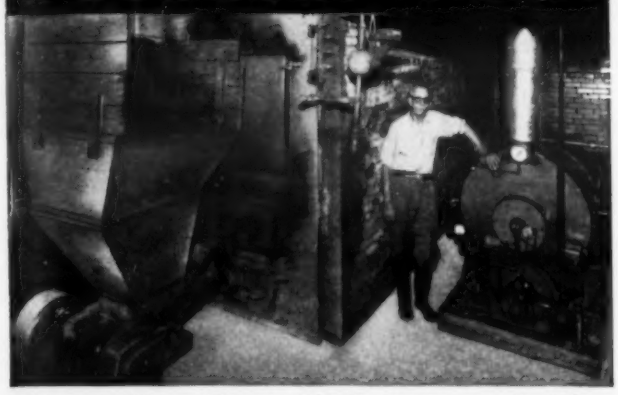
ESTABLISHED 1900 LESLIE CO.

227 Grant Ave., Lyndhurst, New Jersey

PRESSURE REDUCING VALVES • PRESSURE CONTROLLERS
FLOATLESS LEVEL CONTROLS • PUMP GOVERNORS
TEMPERATURE REGULATORS • SELF CLEANING STRAINERS
AIR HORNS • STEAM WHISTLES

▲ For more details circle NED-538 C4 on enclosed inquiry slip ▲

CYCLOTHERM carries entire steam load of conventional boiler *in 1/4th the space*



Walter A. Johnson, Momence (Ill.) Greenhouses, says this about his 50 hp Cyclotherm . . .

"SAVINGS IN FUEL AND MAINTENANCE WILL PAY FOR THIS BOILER IN A FEW MONTHS"

For saving space, fuel, maintenance and money, nothing equals Cyclotherm Steam or Hot Water Generators. Completely packaged units ready to operate on arrival.

Burn oil, gas or combination. Save space of conventional units. Simple flue — no brickwork. Fully automatic controls. Underwriter approved. Exclusive, patented Cyclotherm cyclonic combustion principle—*from cold start to full power in 15 minutes.* Sizes 18 to 500 hp, 15 to 200 psi. Write for free literature: Dept. 40

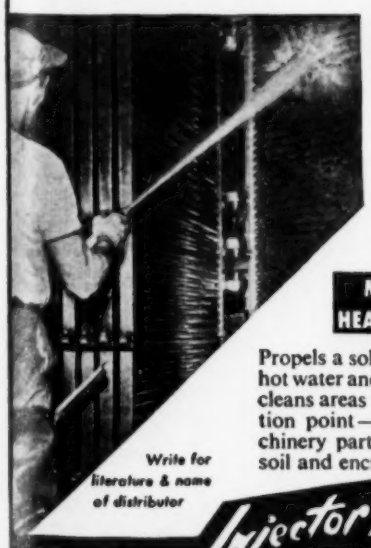
CYCLOTHERM® STEAM GENERATORS
CYCLOTHERM DIV. UNITED STATES RADIATOR CORP.—OSWEGO, N. Y.

▲ For more details circle NED-539 C4 on enclosed inquiry slip ▲

FOR ANY PLANT WITH 5 PSI STEAM & UPWARD

HYDRAULIC JET CLEANER

Leading sanitation authorities recommend this means of hydraulic scrubbing which is incomparable to any other cleaning method.



LEAST EXPENSIVE TO BUY & OPERATE

Only plant steam and cold water required for operation. Affords maximum safety. Has no moving parts, thus minimizes servicing and repairs.

MOST EFFECTIVE FOR HEAVY DUTY CLEAN-UP

Propels a solid jet of high pressured hot water and detergent. Completely cleans areas up to 30 ft. from operation point — even inaccessible machinery parts. Removes all sludge, soil and encrusted deposits.

Write for literature & name of distributor

Injector SELLERS CORPORATION Since 1848
1600 Hamilton Street Philadelphia 30, Pa.

▲ For more details circle NED-540 C4 on enclosed inquiry slip ▲

MAGNETIC POSITIONING TOOL for production and welding work

Consisting of three 45-lb pull Neoprene covered Alnico V permanent magnets, Magic Positioner holding fixture is designed to speed production and welding operations. Magnets are held in a die-cast high tensile aluminum frame and have 360-degree adjustment, regulated by a scale with 5-degree graduations. When positioned, each magnet can be locked in place. Tool securely holds frames, pipe and rings in position at the angle required for the job. It is especially valuable as a substitute for a fixture in short run work and maintenance. Made by **Standard Portable Cord Co.,** 1302 E. Second St., Jamestown, N. Y.

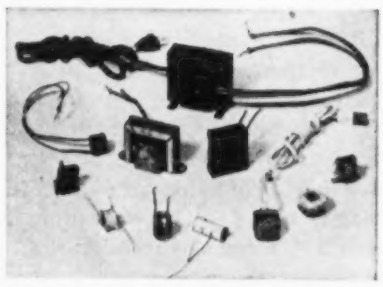
▲ For more details circle NED-541 C4 on enclosed inquiry slip ▲

SOLENOID VALVES rated 1000 psi at 200° F

Now available in sizes from ½ to 2 in., cast iron and cast steel solenoid valves have ratings ranging from 500 psi at 450° F to 1000 psi at 200° F. They are designed for handling all media normally injurious to brass or bronze but not to ferrous metals. Stainless steel hooded pilot seat screw gives positive closing action, and design compensates for heat to prevent sticking. Teflon disks are inert to all media except hot fluorine, and Neoprene O-rings seal joints and prevent leakage. Removable inserts are used throughout the complete size range. Made by **Atkomatic Valve Co.,** Dept. 203, 545 Abbott St., Indianapolis 25, Ind.

▲ For more details circle NED-542 C4 on enclosed inquiry slip ▲

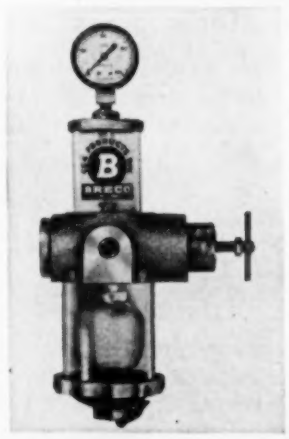
ELECTRICAL COMPONENTS wide variety available



Specializing in making precision coils for field windings, filament, solenoids, torroidal, bobbin and electrical assemblies, company now has custom production facilities available. Other items in the line include power, audio, choke and specialty transformers from multiwatt up to 5 KVA. Made by **Hi-Spex Mfg. Co.,** Dept. NED, 319 Schuyler Ave., Kearny, N. J.

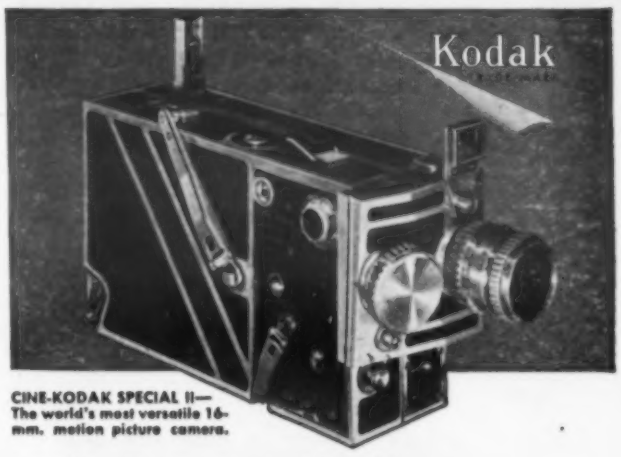
▲ For more details circle NED-543 C4 on enclosed inquiry slip ▲

FILTER-REGULATOR-LUBRICATOR for compressed air lines



Complicated piping and fittings in compressed air lines are minimized by type RFL combination Filter-Lube-Regulator. Only two connections are required for installation in any air line. Filter provides maximum filtering area and has transparent bowl to show when dirty. As a lubricator, oil reservoir can be filled without shutting down air line. Nondiaphgram, piston type pressure regulator provides control for air operated equipment requiring 0 to 100 psi in 2-lb increments and 0 to 200 psi in 5-lb increments. Also a shut-off valve, unit will bleed down stream lines to any pressure between line pressure and atmosphere. It is available for ¼ to ¾-in. pipe sizes. Made by **Breco Mfg. Co.,** CCA Products Div., Dept. NED, 309 E. Saratoga St., Baltimore 2, Md.

▲ For more details circle NED-544 C4 on enclosed inquiry slip ▲



CINE-KODAK SPECIAL II—The world's most versatile 16-mm. motion picture camera.

Make movies that work for you!

In almost every industrial activity—engineering, manufacturing, employee training, research, safety and methods evaluation—in-plant movies are the fastest, easiest, and most effective method for putting across your story.

And for on-the-job movie making, many leading industrial companies have chosen the Cine-Kodak Special II Camera. It has the versatility to handle almost any type of job. Yet its simplicity of operation enables you to get high-caliber results almost as easily as taking home movies.

WRITE FOR FREE BOOKLET, V1-3, describing the Cine-Kodak Special II.

EASTMAN KODAK COMPANY, Rochester 4, N. Y.

▲ For more details circle NED-545 C4 on enclosed inquiry slip ▲

Presto . . . it's UP!

25 ft. "UP-RIGHT" SCAFFOLD-ON-WHEELS

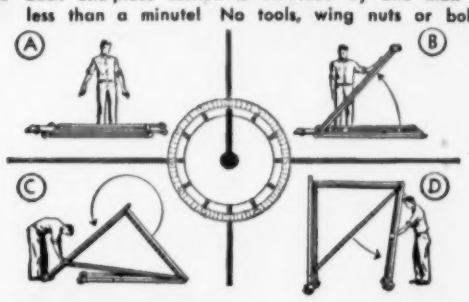
Set up in only 5 minutes!

As if by magic, an aluminum alloy tower of any height desired is ready in minutes! Individual scaffold sections are set one on top of the other. Sections lock into place instantly. The tower rolls down aisles . . . straddles machinery.

HERE'S THE SECRET!...

Patented ONE-PIECE SECTIONS

Each one-piece section is unfolded by one man in less than a minute! No tools, wing nuts or bolts.



WRITE FOR DESCRIPTIVE BULLETIN

"UP-RIGHT" SCAFFOLDS
DEPARTMENT 141 • 1013 PARDEE STREET • BERKELEY, CALIFORNIA
Factories: Berkeley, Calif. and Teterboro, N. J.
Offices in all principal cities

▲ For more details circle NED-546 C4 on enclosed inquiry slip ▲

Protects AIR TOOLS AND EQUIPMENT

against rust, scale and condensation in the air line ...provides constant lubrication

The Keller Lubricator-Filter operates automatically when air tools or equipment are in operation. Filter removes moisture as well as solids—easily cleaned by opening drain cock at bottom. Oil feeds from the lubricator through an upright wick—no flooding or waste when tools are not in use.

Transparent bowls show when filter needs draining, or when light spindle oil should be added to lubricator. Write for descriptive Bulletin #65-5.

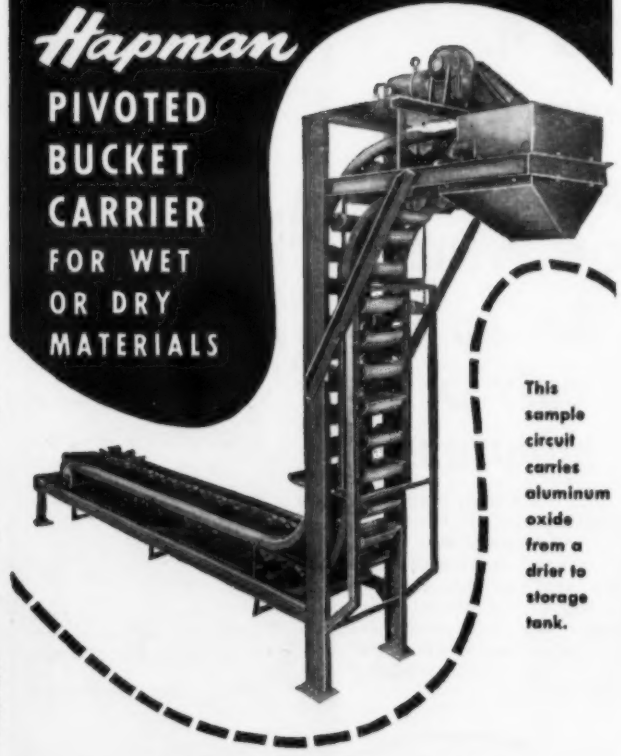
Send for illustrated descriptive bulletin and detailed information

Keller Tool Company
GRAND HAVEN, MICHIGAN

For more details circle NED-547 C4 on enclosed inquiry slip

HERE'S HELP!

GAIN UNIQUE ADVANTAGES WITH THE *Hapman* PIVOTED BUCKET CARRIER FOR WET OR DRY MATERIALS



This sample circuit carries aluminum oxide from a drier to storage tank.

MANY CIRCUIT LAYOUTS POSSIBLE—HANDLES FRAGILE CRYSTALS, LUMP OR POWDERED MATERIALS

One of *your* tough problems in materials handling may be happily solved by the *unique* patented features of this Hapman Carrier design.

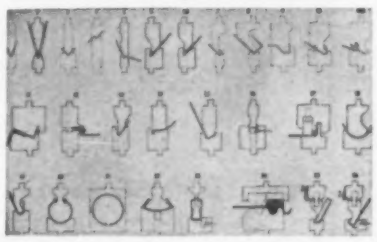
Circuits of many types can be built . . . to carry fragile crystals, corrosives, abrasives and other "problem" materials . . . at speeds to 60′ per minute—100 tons per hour. Design permits *gentle* automatic top-loading—automatic unloading and unusually long life.

There's *much more* that may interest you—
WRITE FOR PIVOTED BUCKET BULLETIN ND-354

Hapman CONVEYORS, INC.
DIVISION HAPMAN-DUTTON COMPANY
KALAMAZOO MICHIGAN

For more details circle NED-548 C4 on enclosed inquiry slip

DIE SELECTION CHART shows 26 standard styles



Twenty-six standard styles of Semco brake dies for bending and forming sheets of steel and other metals are shown on selection guide chart. Sharp bends, scalloped designs, angular shapes, contours and folds are among these standards. Two and three stage types of dies, as well as spring loaded and rocker types, are also included. Of particular interest are slide and horn type dies, some of which perform more than one operation, as well as squeeze dies for completing forming of tubing and pipe for welding. Chart is part of literature covering Semco line of 6 and 8-ft press brakes. Offered by **Service Machine Co.**, 202 Miller St., Elizabeth 4, N. J.

For more details circle NED-549 C4 on enclosed inquiry slip

LOG HANDLING TRACTOR picks up load in alligator jaws

Problem of picking up and handling cut down trees and logs is easily solved by the Terra-Logger, a lift tractor equipped with alligator-type jaws. Logs are

picked up in jaws and carried cleanly and rapidly to desired location, regardless of ground or weather conditions. One man can do the whole job. Made by **American Tractor Corp.**, Dept. N, Churubusco, Ind.

For more details circle NED-550 C4 on enclosed inquiry slip

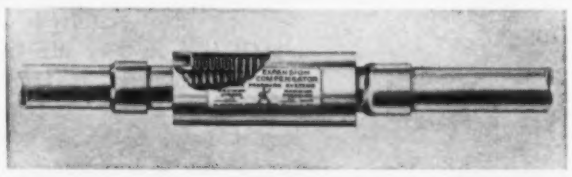
TEMPERATURE DETECTOR has weatherproof construction

Designed primarily for service on sleeve-bearing motors as an over-temperature detector, model 166KC resistance temperature detector can be used with auxiliary equipment for temperature recording, indicating and monitoring systems. Assembly and head are waterproofed for weather protection and are designed to withstand rough usage. Concentration of the temperature-sensitive element in the tip of the tube permits installation in sleeve bearings or against flush surfaces. Tube is available in lengths up to 4 ft with a maximum diameter of 0.2188-in. As shown in illustration, it can be withdrawn and replaced simply by removing holder cap. Usable temperature range is from −70 to 300° C. Made by **Thomas A. Edison, Inc.**, Instrument Div., West Orange, N. J.

For more details circle NED-551 C4 on enclosed inquiry slip

EXPANSION COMPENSATOR for hot water and steam pipes

Expansion compensator for hot water and steam heating system pipes requires no maintenance or adjustment and will last as long as the system. It



consists of a phosphor bronze bellows protected by a floating brass shroud, and is suitable for pressure lines up to 40 psi and temperatures up to 250° F. Unit is installed by standard pipe fitting procedures and is available in ¾, 1, 1¼ and 2-in. diameters. Bellows stroke is ½-in. compressed and ⅛-in. extended, sufficient to absorb expansion for up to 30 ft of copper tube or 50 ft of steel pipe. One male and one female copper tube end are fitted on the bellows. Made by **Flexonics Corp.**, 1343 S. Third Ave., Maywood, Ill.

For more details circle NED-552 C4 on enclosed inquiry slip

Electric "Walkie" Truck High Stacks in 6 foot Aisles!

L-S Jackstacker Electric 4000-6000 lbs. capacity

Lewis-Shepard JackStacker Trucks give you full Electric Fork Truck service in economical, space saving "walkies". Have rigid channel construction telescoping masts . . . stack 48" long loads over 10′ high in aisles *less than 6′ wide!*

JackStackers offer you these exclusive features:

Handle-head controls—lift; lower; tilt; forward and reverse; speed and brake; all within easy fingertip reach.

L-S Hydraulics — high pressure lift and tilt mechanisms use less power.

Dead man electric brakes—extra safety for your operators; brake operates on power switch with handle in any position.

Articulated Linkage — non-counterbalanced models are easy on floors, save wear and tear on drive motors.

Be your own judge! "Electric Walkie Truck Comparison Charts" help you check competitive makes point-for-point . . . help you select the truck best suited to your needs. Write for charts and catalogs.

Nationwide Service — see "Trucks, Industrial" in your Yellow Pages

MULTIPLY MANPOWER LEWIS-SHEPARD

LEWIS-SHEPARD
332-3 WALNUT ST., WATERTOWN 72, MASS.
The "MASTER" Line

For more details circle NED-553 C4 on enclosed inquiry slip

PRECISION-FINISH YOUR OUTSIDE DIAMETERS

The Odee-HONE

★ ACCURATE
★ INEXPENSIVE
★ VERSATILE
★ LIGHTWEIGHT

Corrects out-of-roundness, waviness, chatter . . . Generates diametric size within .0001″ tolerance . . . Hones all parts from ½″ to 2½″ in diameter—regardless of length or material . . .

Can be used on any lathe, drill press, electric drill . . .

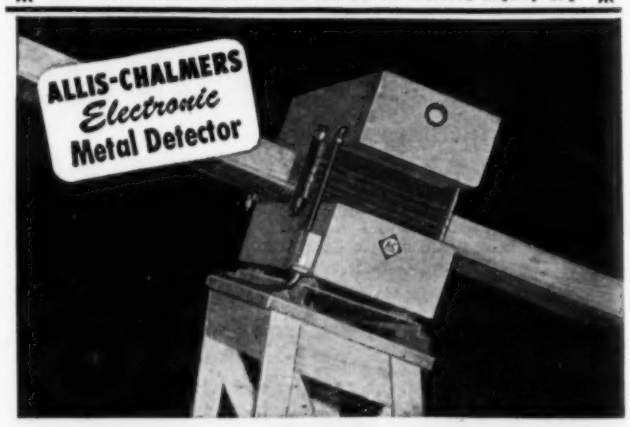
Simple to set up and operate—no aligning, fixturing or wheel dressing is necessary . . .

Removes a few "tenths" or a few "thousandths" stock in less time than it takes to re-center, indicate a part, and dress an abrasive wheel.

Write to:

MICROMATIC HONE CORPORATION
8100 SCHOOLCRAFT • DETROIT 38, MICHIGAN
Guilford, Conn. • Rockford, Ill. • Los Angeles 23, Cal. • Brantford, Ont., Canada

For more details circle NED-554 C4 on enclosed inquiry slip



ARE YOU SURE IT'S PURE?

CAN YOU BE SURE no metal particles are getting into your packaged food? Magnets can't stop lead or brass or aluminum. The answer is, you *can't* be sure — without an Electronic Metal Detector. There's no other practical way!

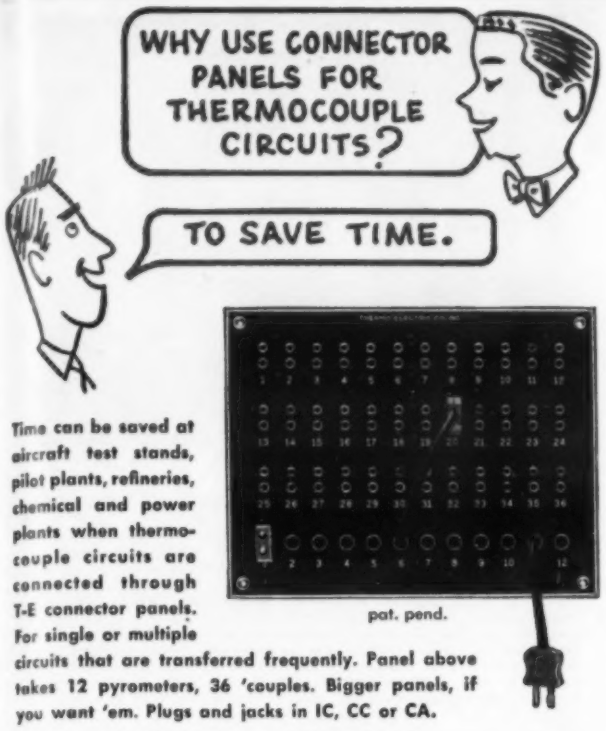
Best of all, Allis-Chalmers Electronic Metal Detectors fit production set-ups. For example, conveyor belts from packaging machines can carry packages through the aperture of the detector at 15 to 600 fpm. Unit compares in upkeep and operating cost with a household radio. Latest design minimizes maintenance.

Call your nearby Allis-Chalmers Office for complete information, or write Allis-Chalmers, Milwaukee 1, Wisconsin.

A-3711

ALLIS-CHALMERS A-C

For more details circle NED-555 C4 on enclosed inquiry slip



Time can be saved at aircraft test stands, pilot plants, refineries, chemical and power plants when thermocouple circuits are connected through T-E connector panels. For single or multiple circuits that are transferred frequently. Panel above takes 12 pyrometers, 36 'couples. Bigger panels, if you want 'em. Plugs and jacks in IC, CC or CA.

Interested? Write for Catalog 23-T.

Thermo Electric Co., Inc.
SADDLE RIVER TOWNSHIP, Rochelle Park P.O., NEW JERSEY
CANADA • THERMO ELECTRIC (Canada) Ltd., BRAMPTON, ONT.

▲ For more details circle NED-556 C4 on enclosed inquiry slip ▲

FOR ACCURATE CONTROL OF AIR

MASONEILAN No. 71 Reducing Valve

Built to maintain accurate control of air pressures under the toughest conditions, this sturdy reducing valve is a real money saver. Compact. Easy to service. It has large capacity . . . instant response. Its simple design and sturdy construction reduces maintenance to a minimum.

Initial pressure up to 250 lbs., reduced to any pressure from 5-60 lbs., 60-100 lbs. Sizes ¼" to ½". Pressure gauge included.

Call your local Mason-Neilan Industrial Distributor for fast, dependable service.

MASON-NEILAN REGULATOR CO.
1189 ADAMS STREET, BOSTON 24, MASS., U. S. A.

▲ For more details circle NED-557 C4 on enclosed inquiry slip ▲

THE RIGHT TOOL WHEN YOU WANT IT

This Continental Counterbore Set No. 1 contains a wide assortment of counterbores, countersinks and pilots arranged for quick selection. Its two holders feature Continental's Balanced Indestructible Drive, in which the tools are engaged or disengaged by a simple "twist of the wrist." One of Continental's three standard counterbore sets is sure to suit your needs. Order through your local Ex-Cell-O representative or write to Continental for complete information. Ask for Bulletin B47-37.

52-10

Continental Standard Counterbore Set No. 1 for counterboring, spot-facing and countersinking.

CONTINENTAL TOOL WORKS
DIVISION OF EX-CELL-O CORPORATION • DETROIT 32, MICH.

▲ For more details circle NED-558 C4 on enclosed inquiry slip ▲

INDUSTRIAL LUBRICATOR has 2-ft long applicator

This portable industrial lubricating machine is suitable for such difficult jobs as oven chain lubrication. It takes its oil direct from a standard 5-gallon can, and has a 2-ft long extension applicator. It is useful for "hard-to-get-at" places and assures thorough lubrication of chains, rollers, etc. Unit has a motor-driven slow-speed agitator giving homogeneous mixing of graphite and other types of lubricants. Made by **R. G. White Engineering Co.,** 1338 Atlantic Ave., Brooklyn 16, N. Y.

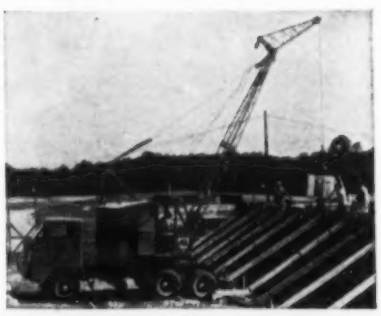
▲ For more details circle NED-559 C4 on enclosed inquiry slip ▲

SHELL & FACE MILLS available with replaceable blade

Replaceable blade is now available on Millit shell end mills from 4 to 8 in. diameter and face mills from 8 to 14 in. diameter. Blade design features maximum tooth back-up that makes possible a replaceable blade cutter with the same full tooth rigidity characteristics as solid body brazed on tip shell end mills and face mills. Rake angles are built into the blade. This enables the user to reblade any size cutter body for all types of cutting service as conversion from cutting aluminum to steel, all with proper rake angles. Blades are made of carbide, high speed steel, or cast alloy. Cutters are made in extra-wide stagger tooth widths for face milling finish cuts requiring a square corner with a high shoulder. Made by **Millit, Inc.,** 51 Flint St., Rochester 8, N. Y.

▲ For more details circle NED-560 C4 on enclosed inquiry slip ▲

CRANE CARRIER has 16½-ft turning radius



Designed for mounting model T-35 Bantam crane, crane carrier has a 12-in. I-beam frame, 26,000-lb rated rear axles and has a 16½-ft turning radius. Four-wheel drive with differential lockout assures positive drive from both axles under any ground condition. A 113-hp gasoline engine transmits power through a five-speed transmission with dual range giving ten speeds forward and two reverse. Carrier is 236 in. long, 96 in. wide and 104⅜-in. high. It has two-position mounting for lifting and digging operations. Front and rear pin-connected pull-out outriggers and fenders are optionally available. Made by **Schield Bantam Co.,** 264 Park St., Waverly, Iowa.

▲ For more details circle NED-561 C4 on enclosed inquiry slip ▲

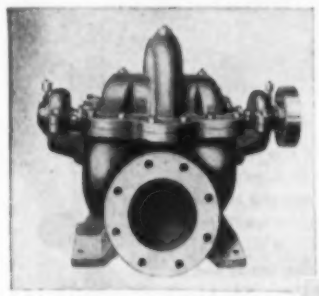
POWER PENTODE for computer service

Designed especially for frequency divider and pulse amplifier circuits in electronic computers and other "on-off" controls with long periods of operation under cut-off conditions, type 6197 power pentode is a 9-pin miniature type having high transconductance. It will supply a high minimum value of plate current during its "on" cycles. It utilizes radiating fins on grid No. 2 to increase dissipation capabilities, a getter shield to minimize interelectrode leakage, and a pure-tungsten heater for durability. Separate base connections are provided for grid No. 3 and cathode. Made by **Radio Corp. of America,** RCA Victor Div., Tube Dept., Harrison, N. J.

▲ For more details circle NED-562 C4 on enclosed inquiry slip ▲

DE LAVAL

makes single and two-stage pumps for a wide range of applications



De Laval Single Stage Centrifugal Pumps are available in both single and double suction designs . . . offer many important design features. Sizes range up to 14" suction and 12" discharge. Write for Bulletin 1002.

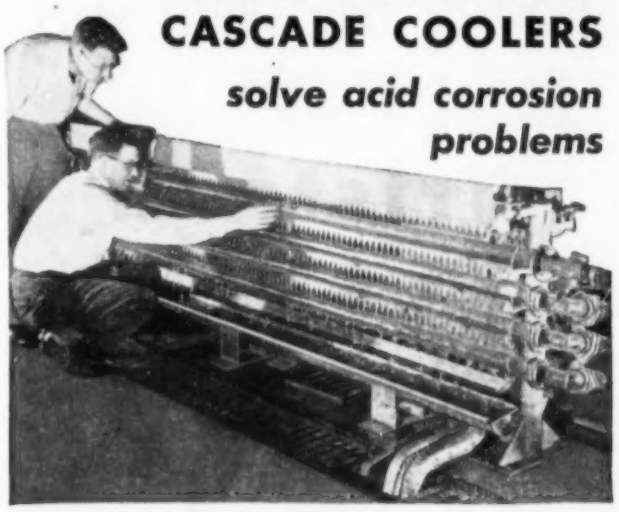
De Laval Two-Stage Horizontal Pumps are designed for long, highly efficient service. Capacities range from 75 to 3,000 gpm, sizes from 2" to 8" discharge, heads to 750 feet. Write for Bulletin 1501.

DE LAVAL STEAM TURBINE COMPANY
808 Nottingham Way, Trenton 2, New Jersey

DL 281

▲ For more details circle NED-563 C4 on enclosed inquiry slip ▲

PYREX® brand Glass CASCADE COOLERS solve acid corrosion problems



Cascade Coolers made of PYREX brand glass piping offer you *these 7 advantages:*

1. **Corrosion resistance**—PYREX brand Cascade Coolers give positive protection against corrosion by any fluid, except hydrofluoric acid and extremely strong caustics.
2. **Assurance of product purity**—Even the most sensitive products cannot be contaminated by chemically stable glass. Glass neither gives nor takes color, odor, taste, or chemical components.
3. **Low first cost**—PYREX Cascade Coolers are low in first cost per BTU transferred. Their long service life further increases the economy. (Glass never wears out.)
4. **Low operating cost**—The corrosion resistance of PYREX pipe permits the use of low-cost river or sea water for coolant.
5. **Low maintenance cost**—The hard, smooth surface of glass resists fouling, assures easy cleaning.
6. **Application flexibility**—You can mount PYREX Cascade Coolers on floor, wall, or ceiling and easily expand them for larger capacities as your requirements increase.
7. **Easy assembly**—The average time required to level and assemble an 8-tube unit is only eight man-hours. No special experience or tools are required.

For full information, specifications, dimensions and nomographs, write Plant Equipment Sales Dept., Corning Glass Works, Corning, N. Y.

CORNING GLASS WORKS, Corning, N. Y.
Send booklet, "PYREX Cascade Coolers."
Name .....
Company .....
Street .....
City ..... Zone ..... State .....

CORNING GLASS WORKS
CORNING, NEW YORK
Corning means research in Glass

▲ For more details circle NED-564 C4 on enclosed inquiry slip ▲

This torque tool leads a

DOUBLE LIFE

FIRST it's a torque screw driver

THEN it's a torque wrench!

This scientifically accurate Apco torque tool does double duty. You can use it for driving screws where tension must be measured accurately. Then, remove the bit . . . substitute a socket, and presto — it becomes a vertical torque wrench that can be used to tighten nuts up to 100 inch pounds. Available in 13 size ranges — in inch grams; inch ounces; and inch pounds.

Here's your chance to save money . . . with two tools in one! This minutely accurate torque tool is made with the same care that characterizes all Apco Mossberg Torque Tools. Send for complete facts. Apco Mossberg Company, 761 Lamb Street, Attleboro, Mass.

APCO MOSSBERG COMPANY

ATTLEBORO, MASS.

For more details circle NED-565 C4 on enclosed inquiry slip

Look...the New 40A

RIDGID

Tristand

with built-in folding tray

Tray pushes up easily to fold Tristand, pushes down easily to set up. Holds stand rigid.

Vise base overhangs front legs so threader handles swing clear. Perfect tripod and balance.

The Tristand you've been wanting. Now stand and tray all one unit—no loose parts. Extra-light weight, stronger more rigid than ever. Full size vise base—3 benders, ceiling brace screw, pipe rest, new tool-hanging slots. Designed for the utmost service for your money. See the new RIDGID 40 A Tristand at your Supply House! Immediate deliveries!

Folds up small as ever for easy carrying to job and it's extra lightweight.

THE RIDGE TOOL COMPANY • ELYRIA, OHIO, U.S.A.

RIDGID

Work-Saver Pipe Tools

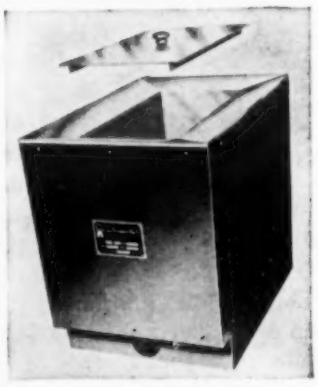
For more details circle NED-566 C4 on enclosed inquiry slip

WIRE TWISTER
each unit is made to order

Each model G-6 Rush wire twister is designed for specific kind of wire, gage of wire and length of twist. Operation is unusually fast since there are no treadle-operated jaws. Funnel-type opening guides loose strands into special head which holds strands in such a way that rotation of head imparts proper twist. Made by **Eraser Co.,** Rush Wire Stripper Div., 1080 S. Clinton St., Syracuse 4, N. Y.

For more details circle NED-567 C4 on enclosed inquiry slip

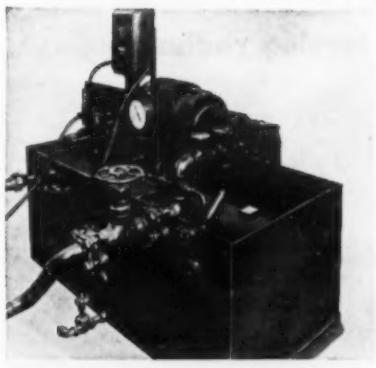
PLASTIC MELTING TANK
has 3.6-gallon dipping capacity



Plastic melting tank designed for dipping and other operations has cast aluminum melting unit giving fast uniform heating and a 3.6-gallon dipping capacity. Cast aluminum melting pot has an inward-pitched self-draining top which eliminates overflow and messy caking. Unit has Robertshaw precision electrical controls and chrome steel sheathed electric heating elements. It measures 15 x 18 x 19 in. overall and weighs 32 lb. Made by **Evens-Thompson Mfg. Co.,** 11362 Kaltz Ave., Center Line, Mich.

For more details circle NED-568 C4 on enclosed inquiry slip

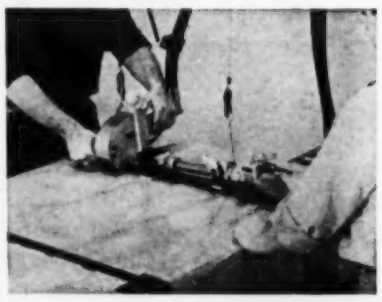
HYDRAULIC POWER UNITS
deliver 200 to 1000-psi pressures



Self-contained power units for operation of oil hydraulic equipment are available in a range of capacities from 7 to 54 gpm of oil at pressures from 200 to 1000 psi. Horsepower ranges from 7½ to 30 for these deliveries. Finger tip adjustment of line pressure is provided. Units have magnetic starter, push-button control and are factory wired. Motor and pump are direct-connected and flange-mounted to eliminate misalignment. Pumps are completely unloaded when the pressure setting is reached. Rapid operation of equipment is facilitated by 2-in. delivery and return pipe. Reservoir, accumulator, oil cleaner, water cooling, pressure shutoff valve and electrical switchgear are provided. Made by **Harvill Mfg. Co.,** 100 Yorba St., Corona, Calif.

For more details circle NED-569 C4 on enclosed inquiry slip

METAL STRAPPING TOOLS
for packaging flat sheet metal



Hydraulic stretching and sealing tools for flat sheet metal are designed for centralized location and consist of power unit, hydraulic stretcher and sealer, and electrically powered band dispenser. In addition to minimizing operator fatigue, power unit uses strapping directly from the coil rather than in cut lengths. This gives uniform adjustable tension and reduces strapping consumption by approximately 10 per cent. Unit is intended to be part of a conveyorized material handling system co-ordinated with production facilities. It is adaptable to ¾ or 1¼-in. wide steel strapping, 0.28 to 0.035-in. thick. It requires 220-440-v ac power supply. Made by **Acme Steel Co.,** 2822 Archer Ave., Chicago 8, Ill.

For more details circle NED-570 C4 on enclosed inquiry slip

THIS DOCKBOARD IS 5 YEARS OLD — *and still going strong!*

When this company bought this Magcoa Magnesium Dockboard back in 1948, it made an investment in safe, light-weight, heavy-duty, *permanent* equipment. The first cost was the only cost.

How about you? Are you still risking workers, lift trucks and loads on a dangerous, makeshift bridgeplate? Replacing one beat-up, worn-out piece of plate with another one that really isn't any better? Why keep on paying and paying for heavy-metal plate never intended for that use, even by the companies that sell it? As a matter of fact, many of them were among the first to switch to safe, long-lasting Magcoa Dockboards—the line with more in-use service than all competitive equipment combined.

But why wait? Get the facts . . . contained in the free new Magcoa *Dockboard Facts File.* And be sure to look into the new Magcoa Portable Yard Ramp: a rugged, high-speed loading dock . . . where and when you want it. Write today.

FACTS FILE

MAGNESIUM COMPANY OF AMERICA

MATERIALS HANDLING DIV. • EAST CHICAGO 6, IND.

For more details circle NED-571 C4 on enclosed inquiry slip

NEW! Atkomatic

SOLENOID

Cast Iron and Cast Steel Valves

ATKOMATIC's new line of cast iron and cast steel valves offer greater range of applications as well as new engineering principles. Internal design features compensate for expansion under heat, prevent sticking. Stainless steel hooded pilot seat screw permits more positive closing action. New design permits pressures to 1000 P.S.I. at 200° F., 500 P.S.I. at 450° F. Teflon disks inert to all media except hot fluorine are used. Removable inserts are used throughout complete range of sizes.

Available in sizes ½ through 2 inches.

Write for Technical Bulletin No. 106 for more complete information

Atkomatic

SOLENOID

ELECTRIC VALVES

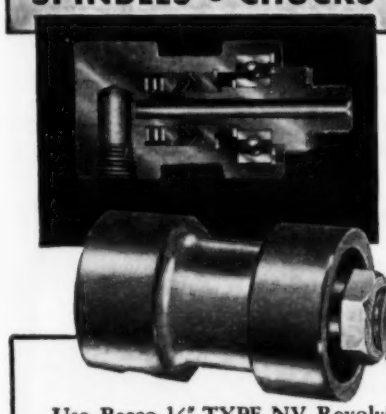
ATKOMATIC VALVE COMPANY

545-B ABBOTT STREET • INDIANAPOLIS 25, INDIANA

For more details circle NED-572 C4 on enclosed inquiry slip

For High Speed Rotating Connections on

SPINDLES • CHUCKS • CLUTCHES



NEW!

BARCO

1/4" TYPE NV REVOLVING JOINT

Use Barco ¼" TYPE NV Revolving Joints wherever you need high speed, low torque, leakproof rotary connections for air, hydraulic, or coolant lines on machine tools and other equipment:

- LIGHT RUNNING! Ball Bearing design handles both radial and end thrust with low torque and minimum wear.
- LEAKPROOF! Thanks to Barco's self-adjusting V-ring seal.
- PRECISION-BUILT! All parts machined to close tolerances. Parts interchangeable and easily renewable.
- COMPACT, DURABLE! Easy to install where space is limited. Economical. Built for rugged service.
- WIDE SPEED RANGE! Up to 2500 RPM. For pressures to 300 psi (air) or 1500 psi (hydraulic). *Send for complete information.*

BARCO MANUFACTURING COMPANY

530D Hough Street • Barrington, Illinois

For more details circle NED-573 C4 on enclosed inquiry slip

CLEANS METAL PARTS
BETTER • FASTER • CHEAPER

NEW LOW COST BENCH MODEL **JET BLAST**

BENCH MODEL JET BLAST
Other sizes are available

SAVES UP TO 60% IN LABOR COSTS

JET BLAST REMOVES Rust, scale and Foreign Deposits from Dies, Molds, Tools or other precision articles without dimensional alterations. Increases adherance and bonding qualities of paint, porcelain, rubber, electroplated metals and a host of other materials . . . Equally effective for cleaning threads for close, smooth fit.

JET BLAST will give any desired finish on flat or irregularly shaped objects . . . Sharp edges are retained.

JET BLAST is excellent for light burring on hard to-get-at surfaces.

JET BLAST materially increases tool life when used for honing cutting faces after grinding . . . Eliminates costly hand labor.

JET BLAST IS A TOOL ROOM NECESSITY

SEND FOR BULLETIN

DISTRIBUTORS: A few territories are still open.

R·W·RENTON and Company
877 ADDISON ROAD • CLEVELAND 3, OHIO

▲ For more details circle NED-574 C4 on enclosed inquiry slip ▲

LOOK BELOW

SPECIALIZED SERVICE ON

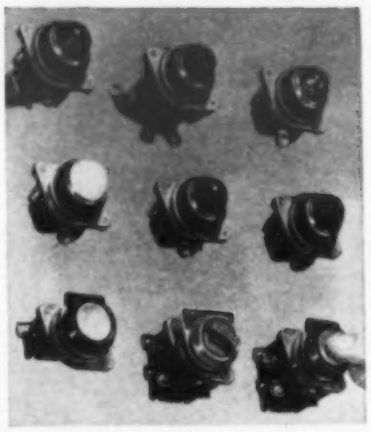
STAINLESS STEEL TUBING

Are you dissatisfied with the quality of your stainless steel tubing? How about deliveries? Does your order "get lost" in big company red tape? Only from Damascus can you actually obtain real specialized service. That's because Damascus makes one product and one product only—stainless steel tubing. You not only get top quality tubing but your order receives preferred attention. For specialized service on your inquiry or order, write, wire or phone.

DAMASCUS TUBE COMPANY
STAINLESS STEEL TUBING AND PIPE
Greenville, Pennsylvania

▲ For more details circle NED-575 C4 on enclosed inquiry slip ▲

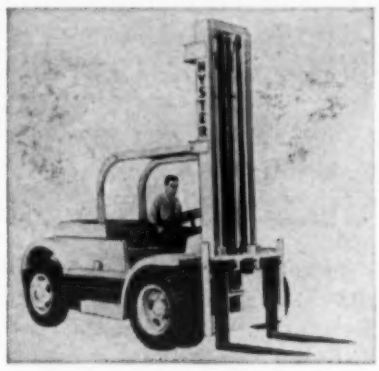
INDICATING LIGHTS
oiltight heavy duty units



All-glass faceted lenses of line of heavy duty oiltight indicating lights are factory sealed to metal caps. Featuring wide angle visibility, lights are available with red, green, white, blue, amber and clear lenses. They can be front or back mounted. Resistor, transformer and full-voltage types are available, with ratings from 110 to 600 v with a 10-amp continuous rating. Made by **General Electric Co.**, Schenectady 5, N. Y.

▲ For more details circle NED-576 C4 on enclosed inquiry slip ▲

HEAVY-LIFT TRUCK
lifts 15,000 lb at 24-in. center



Heavy-duty water-cooled industrial engine powers model RC-150 lift truck which has capacity of 15,000 lb at 24-in. load centers. Mounted on 8.25 x 20 pneumatic tires, truck features ample underclearance to negotiate rough terrain loaded or unloaded. Short length, narrow width, high degree of visibility, roller-mounted uprights, large braking area and exceptionally strong construction are other features. Models with capacities of 16,000 and 18,000 lb on 24 in. load centers are also available. Made by **Hyster Co.**, 2906 N. E. Clackamas St., Portland 8, Oreg.

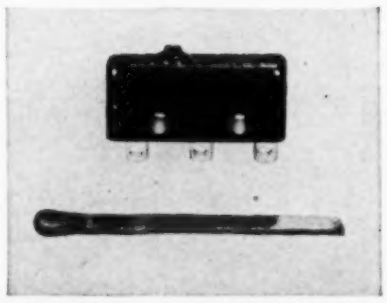
▲ For more details circle NED-577 C4 on enclosed inquiry slip ▲

POINT CONTACT TRANSISTORS
for amplifying and switching

Designed for use in computers and telephone and communications systems, types CC50 and CC51 point contact transistors are intended for amplifying and switching operations respectively. Uniformity of characteristics and reliable performance are assured by maintenance of close physical and electrical manufacturing tolerances. Made by **Amperex Electronic Corp.**, Sales Engineering Div., 233 Duffy Ave., Hicksville, L. I., N. Y.

▲ For more details circle NED-578 C4 on enclosed inquiry slip ▲

SUBMINIATURE SWITCH
offered with three actuator types



Made without dead center and resistive to shock and vibration, this subminiature basic switch measures 27/32-in. long by 23/64-in. high by 0.260-in. thick. Action of contacts is independent of speed of actuation. Switch has solder type terminals and is mounted by two No. 2 screws through the plastic case. Toggle, pushbutton and leaf spring actuators are available. Switch is available normally closed single-pole single-throw, normally open single-pole single-throw or single-pole double-throw. It is rated at 2.5 or 5 amp 125/250 v ac; 30 v dc, 2.5 amp inductive; or 30 v dc, 4.0 amp resistive. Made by **Electro-Snap Switch & Mfg. Co.**, 4232 W. Lake St., Chicago 24, Ill.

▲ For more details circle NED-579 C4 on enclosed inquiry slip ▲

AMES

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. . . not because they cost more (in the long run they're more economical) but because they're completely impersonal!

Ames Micrometer Dial Gauges and Indicators meet the demand for increasingly critical precision instruments. They are built by exclusive Ames methods and machines, and 100% checked for accuracy. They are extremely sensitive yet ruggedly built to give you *longer* service with *less* down-time.

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Representatives in principal cities. B. C. AMES CO. 34 Ames Street Waltham 54, Mass.
Mfgr. of Micrometer Dial Gauges • Micrometer Dial Indicators

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New SERIES 70 MULTIFINISH HAND MAGNETOOL

• PERMANENT • NON ELECTRIC • NO BATTERIES •

MODEL 71
9" x 5" x 1¾"
Picks up 2-3 lbs.
$19.75

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. . . Separates steel parts from non-ferrous metals . . . Eliminates steel particles from chemicals, food, textile fabrics . . . Removes heat treated parts from carburizing material . . . Draws steel parts from tumbling material . . . Increases efficiency in the handling of extremely hot or cold parts.

MAGNETOOL®
Division of MULTIFINISH MFG., CO.
26341 W. Eight Mile • Dept. 457 • Detroit 19, Mich.

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You Should Have These

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SWATCH BOOKS

Our staff of engineers is at your service to help solve your fabric and tape problems.

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91 WORTH STREET
New York 13, N. Y.

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CUT COSTS . . . FASTEN "ON THE DOUBLE" with the Chicago "214" DOUBLE RIVET SETTER

The "214" automatically feeds, inserts and clinches two rivets at a time... with speed that may mean a big saving in your fastening costs.

14" throat makes large assemblies easy to handle. For up to 9/64" diameter steel tubular rivets—lengths to 7/8". Quick Change Rotary Type Hoppers and Raceways permit a 5-minute changeover to rivets of different size. Adjustable anvils and riveting centers add to its versatility.

Ask us how the "214" can help you cut costs. Send a sample of your problem assembly (or blueprint) for a Free fastening analysis.

FREE CATALOG contains valuable engineering information and rivet specifications plus illustrated descriptions of 26 Chicago Automatic Rivet Setters.

Chicago Rivet & MACHINE CO.
9606 West Jackson Boulevard, Bellwood (Chicago Suburb) Illinois
Branch Factory: Tyrone, Pa.

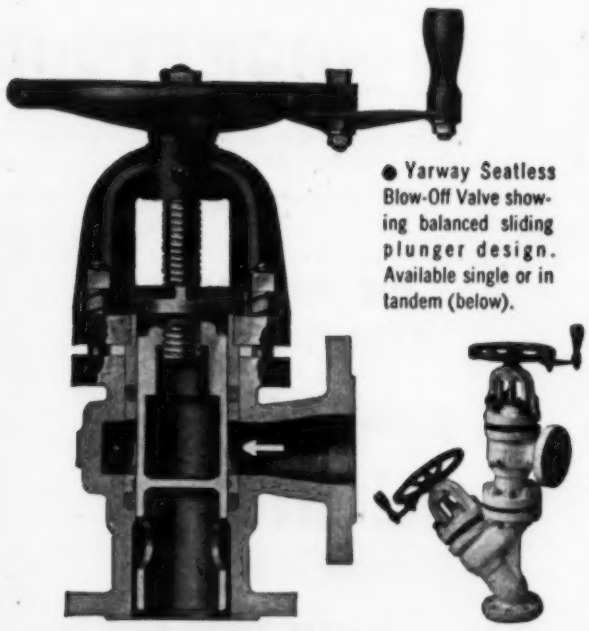
▲ For more details circle NED-583 C4 on enclosed inquiry slip ▲

KEEPS BOILER BLOW-DOWN LINES DROP TIGHT

Yarway Seatless Blow-Off Valves keep blow-down lines *drop tight* because *there is no seat to score, wear, clog or leak.*

The well-known balanced sliding plunger design—combined with the newest metallurgical developments—make Yarway Seatless Blow-Off Valves rate top efficiency for low and medium pressure boiler plants.

Among high pressure plants, Yarway Unit Tandem Valves are used by more than 4 out of 5.



● Yarway Seatless Blow-Off Valve showing balanced sliding plunger design. Available single or in tandem (below).

If you operate a boiler, be sure to send for the Yarway Blow-Off Valve Books—Bulletin B-426 for pressures to 400 psi or Bulletin B-433 for higher pressures to 2500 psi. Write . . .

YARNALL-WARING COMPANY
131 Mermaid Avenue, Philadelphia 18, Pa.
BRANCH OFFICES IN PRINCIPAL CITIES

YARWAY blow-off valves

▲ For more details circle NED-584 C4 on enclosed inquiry slip ▲

DICTATING & TRANSCRIBING MACHINE
portable unit uses belt to record

This portable magnetic Dupli-Voice dictating and transcribing machine makes use of belt to record, instead of wire, tape or disks. The Erase-o-matic belt reproduces with the same fidelity as tape or wire, can be used over and over again and can be mailed or easily filed. Unit weighs only 12 lb and measures 5½ x 10 in. It combines high-fidelity performance with the economy of magnetic recording. Made by **Dupli-Voice Co.**, Dept. NE, Algonquin, Ill.

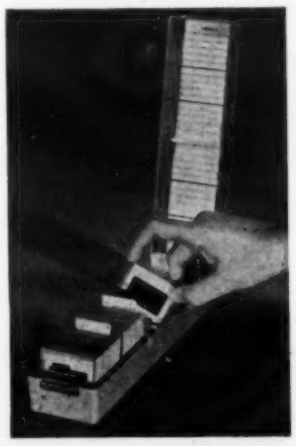
▲ For more details circle NED-585 C4 on enclosed inquiry slip ▲

ADDING MACHINES
provide versatile totaling methods

Available in 22 basic models, Custom adding machines make it possible for operator to obtain totals and sub-totals by depressing the add-bar, or to print both using the dual-total key. By setting this Select-o-matic feature at the total position, operators can obtain a series of totals from the add-bar. Occasional sub-totals can then be made from the dual-total key without resetting. Where the need is mainly for sub-totals, process can be reversed. This arrangement speeds operation by reducing hand travel. Illustration shows full keyboard and ten-key keyboard units from the line. Made by **Victor Adding Machine Co.**, 3900 N. Rockwell St., Chicago 18, Ill.

▲ For more details circle NED-586 C4 on enclosed inquiry slip ▲

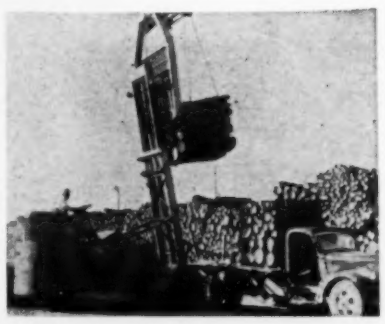
SLIDE FILE BOX
holds up to 200 slides



About 200 standard Kodachrome transparencies in Ready-Mounts or 100 Kodaslide stereo mounts is the capacity of the Kodaslide Ready-File, made of nonshatterable polystyrene. It will accept slides mounted in glass or in Ready-Mounts, or combinations of 2 x 2-in. slides and stereo mounts. File is designed to permit stacking and has four index cards for filing slides in six groups. Sufficient indexing slots are provided to allow filing groups of 3 to 100. An index sheet is included inside the box cover. Made by **Eastman Kodak Co.**, Dept. E, 343 State St., Rochester 4, N. Y.

▲ For more details circle NED-587 C4 on enclosed inquiry slip ▲

PULPWOOD LOADING DEVICE
payload is 9000 lb



Enabling operator to load both sides of a flat car from one position, Pulploader pulpwood loading attachment is designed for series 15LH fork lift truck and carries a 9000-lb payload. Hydraulic operation is controlled from the driver's seat. Device tilts from the vertical for easy positioning and can be raised to a height of 26 ft 10 in. Spliced cables supporting the load are freed by operation of a hydraulic hook release. After a load has been positioned and released, it can be leveled by bumping with the 78 by 84-in. bumper grill. Attachment is of welded steel construction. Made by **Clark Equipment Co.**, Industrial Truck Div., 1952 Arze St., Battle Creek, Mich.

▲ For more details circle NED-588 C4 on enclosed inquiry slip ▲

PAPER TOWEL DISPENSER
reduces cost up to 40%

Westroll Towels in Micromatic Towel Dispensers reduce towel waste to an absolute minimum. Their design takes human nature into account. People will take just enough toweling and no more when they have to crank it out by hand. Tests show Westroll users average only 17 inches of paper, against 22, 33 or even 44 inches of interfold or flat towels. Users can crank out exactly the amount of towel necessary; as little as two inches for the removal of women's lipstick, for example.

There are also savings in maintenance. One filling of the Westroll Cabinet is equivalent to four fillings of ordinary flat towel dispensers. Here's an immediate saving in costly janitors' time. The Westroll dispenser has relatively few working parts; its maintenance is negligible. Westroll dispensers are loaned and maintained by West. They are easy to keep clean and help keep washrooms spic and span and free from litter.

Westroll paper towels, made especially for these cabinets, are of uniform high quality. Tested and retested during manufacture, they are exceptionally strong and absorbent. Packed 12 rolls to the case, each case contains sufficient toweling for approximately 8,000 single sheet dryings.

Write for folder and more information. **West Disinfecting Company**, Dept. 16, 42-16 West Street, Long Island City 1, N. Y. —*Advt.*

▲ For more details circle NED-589 C4 on enclosed inquiry slip ▲

PRECISION INTERNAL FORMING with a

MAXWELL RECESS-O-MATIC

Fast set-up . . . repetitive accuracy . . . maximum capacity and throw . . . these features make the RECESS-O-MATIC tool superior for precision internal forming operations. Designed especially for use on multiple-spindle automatics, this tool can be attached quickly without need for special cams.

The RECESS-O-MATIC is available in three sizes having maximum capacities of 2, 3 and 4 inches. Recessing stroke ranges from ¼ to ½-inch.

394-MC

Write for catalog. (Type DB)

THE MAXWELL COMPANY
390 BROADWAY • BEDFORD, OHIO

▲ For more details circle NED-590 C4 on enclosed inquiry slip ▲

take the back-breaking LIFT out of the Heavy Jobs with . . .

Other WELD-BILT Equipment:

Skid Platforms

Pallet Trucks

Portable Lift Table for loads to 2000 lbs.

Heavy Duty Lift Table, Electric or Manual Control.

Weld-Bilt HYDRAULIC LIFT TABLES

Now heavy dies, sheet steel, big machined parts are *easy* to handle — with WELD-BILT Hydraulic Lift Tables. Simple to adjust to loading height, move to press or machine position, and raise or lower to comfortable working position — without heavy lifting.

Portable Elevators

Heavy Duty Lift Tables, for loads up to 10 tons, have foot pedal and push button control, or foot pump. Portable Lift Table handles loads to 2000 lbs. Write for bulletin and prices.

Lift Trucks

WEST BEND EQUIPMENT CORP.
Materials Handling Engineers
311 Water Street • West Bend, Wisconsin

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SAVE UP TO 85% ON GOVERNMENT SURPLUS

MAGNI-FOCUSER
Has fine ground lenses of optical glass. Neutralizes eye strain from close work. Binocular design gives third dimensional vision. Allows freedom of both hands. Wear over glasses. Plastic frame with adjustable headband.
SIZES: 20" focal lgth. 1½ power – 14" focal lgth., 1¾ power, 10" focal lgth., 2½ power; 8" focal lgth., 2½ power ..... price each ONLY 10.50

HYDRAULIC EQUIPMENT
We stock over 100,000 Hydraulic Cylinders in 106 different types and sizes. These can be adapted wherever tremendous power is needed to push, pull, hoist, mould or drive, etc.
SPECIAL
Gives 20,000 lb. thrust using 1500 PSI line pressure as obtained from our hydraulic pumps. Will produce up to 40,000 lb. thrust with 3000 PSI. Can also be used on a low pressure air system. Has 4" bore; 18" stroke; 30½" long. Ideal for shop. Part No. 27 USED 29.95 NEW 43.95

OTC TOOLS
See our complete line. Pullers for Gears, Bearings, Wheels, Pulleys, Bushings, Shafts, etc.

HYDRAULIC HAND PUMP
Operating pressure 1500 PSI. Cap., 1.5 cu. in per complete cycle ... 12.75

NEW 10 TON HYDRAULIC PRESS
Use this Press in the Shop or take it with you on the job. Frame is 4" welded channel iron. Has 4½" stroke, 2½" diam. ram. Valve operates piston in both directions. Adjustable platform. Positive power Hand Pump with handle. 2000 PSI pressure gauge. 129.00
SIZE: 68" high 27" wide 29" base

ACCUMULATORS
HYDRAULIC
A-2B FLOATING PISTON TYPE – 4"x 18" Built to stand 2,000 PSI 12.75
A-5 VICKERS – 10" dia. Ball type. Built to stand 2000 P.S.I. 24.50
NOTE: Stocks include bargains in Hydraulic Pumps – Valves – Motors – Boosters – as well as Oil, Water and Fuel Pumps, etc.

WORLD'S MOST AMAZING BARGAIN CATALOG
320 PAGE-1954 EDITION
Packed with SENSATIONAL VALUES in GOV'T SURPLUS – FACTORY CLOSE-OUTS – and GENERAL MERCHANDISE. Fully priced and illustrated. Thousands of items in Machine and Industrial Tools – Hydraulic Equipment such as Cylinders, Pumps, Valves, Motors, Fittings, etc. Bargains in Electric Motors, Generators, Blowers, Parts, etc. Also Hand and Power tools, Precision Instruments, Bearings, Hose Clamps, Winches, Foam Rubber, Microscopes, etc. ALL AT PALLEY BARGAIN PRICES – PRICED TO SELL!

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Pay by M.O. or check. P.O.'s accptd. from D&B firms. ½ deposit with C.O.D.'s. Prices FOB Los Angeles

For more details circle NED-592 C4 on enclosed inquiry slip

THE WORD IS GETTING AROUND...
Abart GEARMOTORS

SAVE YOU MONEY!
BECAUSE THEY'RE
• ACCURATE • DEPENDABLE
• EFFICIENT • SPACE-SAVING

No doubt about it—Abart Gearmotors save you money because they lower operating costs! And you've a wide selection to choose from, too. Abart Gearmotors are available with output speeds as low as 17½ R.P.M., 1/6 to 5 h.p., ratios 5 4/5 up to 100 to 1.

Free Catalog
Send for free illustrated pocket-size Catalog containing full engineering data on Abart Gearmotors.

ABART GEAR and MACHINE CO.
4826 WEST 16th STREET • CHICAGO 50, ILLINOIS
Also Mfrs. of Gears and Speed Reducers

For more details circle NED-593 C4 on enclosed inquiry slip

Bulletin 700
UNIVERSAL SOLENOID RELAY

4-POLE RELAY WITH UNIVERSAL CONTACTS
Change from NORMALLY OPEN Contacts to NORMALLY CLOSED Contacts by Simply Shifting Connections

The Allen-Bradley Bulletin 700 universal solenoid relays are a new idea in relay design. The new dual contact arrangement permits quick change from normally open contacts to normally closed contacts by simply shifting connections . . . a simple and easy operation. Only ONE moving part. Rating of 10 amperes at voltages up to 600 volts. Allen-Bradley Co., 1334 S. Second St., Milwaukee 4, Wisconsin.

ALLEN-BRADLEY
QUALITY
MOTOR CONTROL

For more details circle NED-594 C4 on enclosed inquiry slip

ROLLER CONVEYORS feature nylon bearings

Industries where brine, alkali and acid conditions causes repeated failures of ball bearing type conveyors can make use of Nylo-Roll conveyors which feature nylon bearings turning on stainless steel axles. Tests made on conveyors included boiling a completely assemblied unit in 75 per cent solution of Oakite as well as 65 per cent salt brine solution. Zinc-grip coated 2-in. rollers, bearings and axles remained undamaged. Conveyors are available in standard 11½, 15, 18 and 24-in. widths and any desired lengths in gravity and live roller types. Standard live roller models are powered with gearhead motors to suit requirements. Made by **Metzgar Conveyor Co.**, 416 Douglas St. N.W., Grand Rapids 4, Mich.

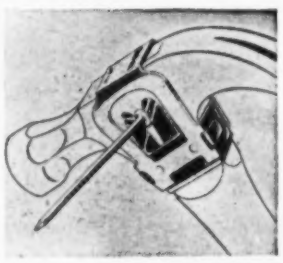
For more details circle NED-595 C4 on enclosed inquiry slip

TOWING TRACTOR has drawbar pull of 6000 lb

Dual range, full-reversing transmission of the model TC-60 Payloader towing tractor is provided with a solenoid vacuum-actuated tail shaft brake which stops transmission rotation while shifting and enables gears to mesh quickly and quietly. Maneuverable unit has a double - action torque converter drive which provides torque multiplication when necessary and automatically reverts to fluid drive under light load conditions. Unit has a drawbar pull of 6000 lb and is offered with following accessories and attachments: quick-detachable couplings for front and rear; enclosed cab; hydraulically driven winch with 9000-lb line pull; electrically controlled snow plow of reversible trip-blade type; headlights and back-up lights. Made by **Frank G. Hough Co.**, 746 Seventh St., Libertyville, Ill.

For more details circle NED-596 C4 on enclosed inquiry slip

NAIL-HOLDING CLIP simplifies starting of nails



All nails from shingle types to spikes can be held by the Third Hand nail clip which quickly attaches to most carpenter's hammers. Device simplifies starting nails, since material can be held in position with one hand while nail is started with other hand. When nail is started, slight pull frees hammer which is then used to drive nail in usual manner. Clip also gives extra reach when starting nails, often making unnecessary the use of stepladder or scaffolding. Now made by **Utica Drop Forge & Tool Corp.**, 2500 Whitesboro St., Utica 4, N. Y.

For more details circle NED-597 C4 on enclosed inquiry slip

COUNTING INSTRUMENT for nuclear particle counting

For automatic counting of electrical pulses obtained from nuclear particle detection equipment, model 2200 automatic scaling unit forms basic unit in a wide variety of applications using linear amplifiers and other associated equipment. Count indication is entirely direct reading and maximum counting speed is 100,000 per second. A four-digit mechanical register is used and provision is made for driving an external relay in parallel with the register. Other features include 1 microsecond resolution, predetermined count and time and motor driven reset. Made by **Beckman Instruments, Inc.**, Berkeley Scientific Div., Dept. NED, 2200 Wright Ave., Richmond, Calif.

For more details circle NED-598 C4 on enclosed inquiry slip

In SHOP BOXES little things make a BIG difference!

STYLE A

...you'll benefit from these UNION METAL advantages

• Built-In Wear Runners give years of extra wear at no extra cost.
• One-Piece Bottom and Ends for added strength where it's needed most.
• 14-Gauge One-Piece Drawn Angle Corners, more sturdy than the conventional flat strips.
• Flexible Tooling permits special box dimensions without premium prices.
• Prompt Shipment on all common and unusual types of steel shop boxes.

Send for Bulletin MH-807A for information and dimensional data. Address The Union Metal Manufacturing Company, Canton 5, Ohio.

UNION METAL
Material Handling Equipment

For more details circle NED-599 C4 on enclosed inquiry slip

Extra PROTECTION AGAINST FIRE • THEFT • SABOTAGE

THE CHICAGO WATCHCLOCK SYSTEM

"The first and still the first!"

A system that not only protects your property but pays for itself thru reduced insurance rates! What more could you ask? . . . So obey that impulse! Write for our new catalog-folder. It explains the simplicity and the infallibility of this portable watchman's-clock and recording system.

CHICAGO WATCHCLOCK
Division Great Lakes Industries, Inc.
1522 S. WABASH AVE., CHICAGO 5, ILL.
Offices in Principal Cities

For more details circle NED-600 C4 on enclosed inquiry slip

THE HI-GAIN Industrial POCKETSCOPE ®BY WATERMAN

MODEL S-14-A

Identified by its hi-sensitivity and incredible portability, S-14-A POCKETSCOPE now permits "on-the-spot" control, calibration and investigation of industrial electronic, medical and communications equipment. Direct coupling without peaking, used in the identical vertical and horizontal amplifiers, eliminates undesirable phase shifting. Designed for the engineer and constructed for rough handling.

Wt. 12¾ lbs. 12" x 5¾" x 7"

Vertical and horizontal channels: 10mv rms/inch, with response within—2DB from DC to 200KC and pulse rise of 1.8 μs. Non-frequency discriminating attenuators and gain controls with internal calibration of trace amplitude. Repetitive or trigger time base, with linearization from ½cps to 50KC with ± sync. or trigger. Trace expansion. Filter graph screen. Mu metal shield. And a host of other features.

WATERMAN PRODUCTS CO., INC. PHILADELPHIA 25, PA.
CABLE ADDRESS: POKETSCOPE

WATERMAN PRODUCTS INCLUDE.

S-4-A	SAR	PULSESCOPE
S-5-A	LAB	PULSESCOPE
S-10-B	GENERAL	POCKETSCOPE
S-11-A	INDUSTRIAL	POCKETSCOPE
S-14-B	WIDE BAND	POCKETSCOPE
S-15-A	TWIN TUBE	POCKETSCOPE

Also RAKSCOPES, LINEAR AMPLIFIERS, RAYONIC TUBES and other equipment

WATERMAN PRODUCTS

▲ For more details circle NED-601 C4 on enclosed inquiry slip ▲

Jergens *Live* Pilot Bearing Bushings

PROVIDE ABSOLUTE SEAL FOR ROLLER AND NEEDLE BEARINGS IN PRECISION PILOTING APPLICATIONS

Heavy duty boring mill operation utilizing Jergens absolute seal Pilot Bearing Bushing to increase precision, depth of cut and tool life.

Only Jergens Absolutely Seals Out Coolants and Grit

As a result of ingenious design and precision manufacture, Jergens Pilot Bearing Bushings provide for the first time in bearing applications an absolute seal against coolants and fine powdered abrasive grit and dust entering the bearing cavity. Jergens Bushings make possible increased precision in piloting applications with greater depth of cut and eliminate costly tool failures and expensive down time.

The world's largest production plants are today making Jergens Pilot Bearing Bushings an absolute must wherever tool holders require support to increase accuracy and stock removal or to decrease tool breakage.

Roller and Needle Bearing Pilot Bushings Performance Features

- Provides absolute seal against coolants, grit and dust
- Greater overall length increases accuracy and bushing life
- Needle Bearings fill applications requiring closer center distances
- Bearings can be dissembled without removing housing
- Cartridge-type bearing holder provides greater accuracy
- Protects against thrust loads as well as radial
- Tapered bearings can be adjusted to compensate for wear
- Adaptable to receive removable slip bushings, keys or keyways

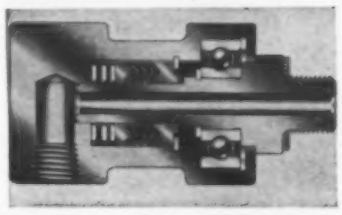
J. G. JERGENS CO.
11106 Avon Ave. • Cleveland 5, Ohio

SEND FOR COMPLETE CATALOG NE-3

J. G. Jergens Co., 11106 Avon Ave., Cleveland 5, Ohio
Please send Pilot Bearing Bushing Catalog to:
NAME_____
COMPANY_____
ADDRESS_____
CITY_____ STATE_____

▲ For more details circle NED-602 C4 on enclosed inquiry slip ▲

REVOLVING JOINT for air and hydraulic service



Air or hydraulic piping connections to clutches, power transmission drive units, chucks, spindles, grinding wheels and other rotating machine parts can be made with improved type NV light-running revolving joint. Shaft has right hand ⅝-in. 18 NF3 straight machine thread end, and inlet is tapped with ¼-in. pipe thread. Joint has compact one-piece bronze casing, spring-loaded V-ring seals, hardened and ground steel shaft and permanently lubricated sealed ball bearings. It is suitable for use at temperatures up to 180° F and pressures to 300 psi (air) and 1500 psi (hydraulic). Recommended maximum speed is 2500 rpm. When installed, joint projects only 3⅛ in. beyond hub. Made by **Barco Mfg. Co.,** Dept. J-9, 500 Hough St., Barrington, Ill.

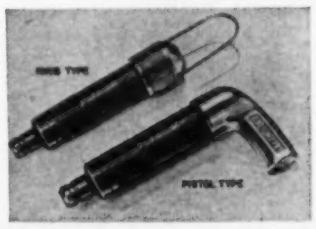
▲ For more details circle NED-603 C4 on enclosed inquiry slip ▲

ROTARY AIRLOCK FEEDER handles granular abrasive substances

Finely ground abrasive substances such as pulverized phosphate rock, fly ash, cement, clay, silica, alumina and sewage sludge are handled by model PAV-12 heavy-duty rotary airlock feeder. Designed to prevent flushing of these free flowing materials through stuffing glands and dust seals, feeder is practical for use on rotary dryers, coolers, dust collectors, electrical precipitators, bins, hoppers and other process vessels operating at atmospheric or higher pressures. Incorporating the Prater closed pocket rotor, feeder performs as both a feeder and an airlock to prevent air or gas leakage into or out of system. It is available with or without packaged power unit from **Prater Pulverizer Co.,** Dept. D, 1515 S. 55th Ct., Chicago 50, Ill.

▲ For more details circle NED-604 C4 on enclosed inquiry slip ▲

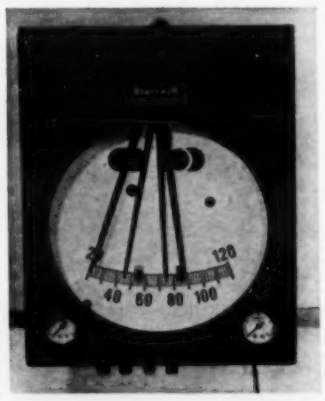
PNEUMATIC HAMMERS with pistol and knob type handles



Available with either pistol or knob type handle, Caldwell general purpose air hammers are suitable for drilling, chipping, trimming, scaling and other similar applications. They measure 9¾ in. long by 1⅝ in. diameter. They come into operation when pressed into contact with the work and stop when withdrawn. Approximately 5 lb in weight, they operate on air pressures ranging from 30 to 100 psi. Tool chuck is of the quick-change push-pull type. Distributed by **Burgess Thomas Co.,** Dept. C, P. O. Box 287, Bloomfield, N. J.

▲ For more details circle NED-605 C4 on enclosed inquiry slip ▲

DUAL CONTROLLER indicates, controls two temperatures



Two temperatures are indicated and controlled by this dual indicating controller, available with a wet and dry bulb system for humidity, as well as a vapor gas or mercury-filled thermal systems. Indicator has two pointers, and the measuring system components and set-point indices are color-coded to their respective pointers. Applications include those where a single instrument is suitable for checking two temperatures and where indicating controllers are preferred to recorders. Made by **Minneapolis-Honeywell Regulator Co.,** Industrial Div., Wayne & Roberts Aves., Philadelphia 44, Pa.

▲ For more details circle NED-606 C4 on enclosed inquiry slip ▲

HOBBS TANGLE-PROOF LOCK WASHERS
EST. 1883

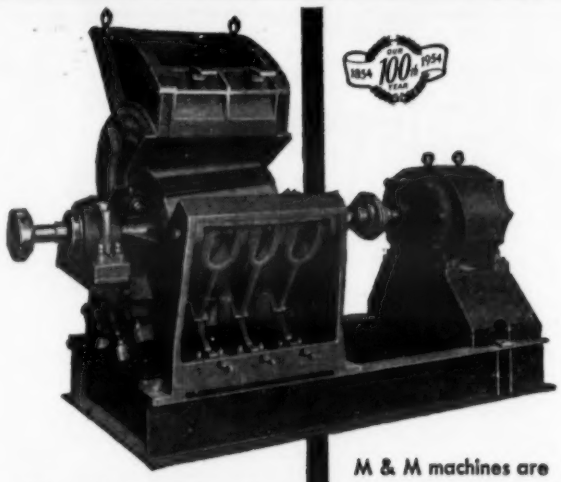
You can *depend* on Hobbs spring lock washers to meet all job requirements and government specifications. Available in high carbon steel, stainless steels, silicon and phosphor bronze, and all types of platings.

HOBBS COTTER PINS are available in steel, brass, stainless steel, and monel in extended prong (Loxit) and hammer-lock (HobLok) types. HobLok cotter pins lock themselves when hit with hammer!

Write now for Hobbs lock washer and cotter pin price lists!

HOBBS MANUFACTURING CO.
Fastener Division
EST. 1883 41 SALISBURY ST., WORCESTER 5, MASS.

▲ For more details circle NED-607 C4 on enclosed inquiry slip ▲



M&M HOGGING MACHINES

M & M machines are built in many types and sizes for hogging wood, paper, plastics, rubber, meat, bones into uniform size for easy disposal or further processing into valuable by-products. Write for illustrated specification catalog. 78

MITTS & MERRILL
1000 SOUTH WATER • SAGINAW, MICHIGAN

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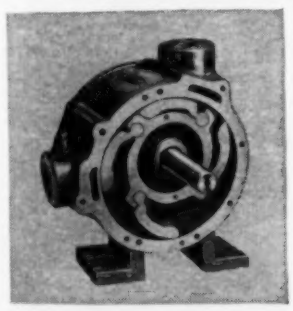
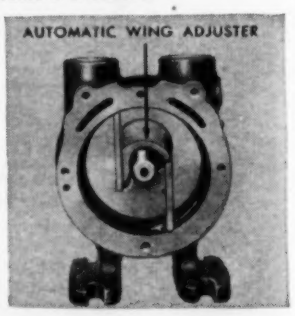
When it has to Run for Years and Years WITHOUT FAILURE

MAKE IT A LEIMAN VACUUM AND PRESSURE PUMP

Leiman users say this:
"Almost continuous operation, 24 hours a day for 21 years"
"Using Leiman pumps on 350 machines. No pump has given a moment's trouble"



4-WING TYPE. Vacuums to 20"; pressures to 15 lbs.; displacement to 162 cfm. Wings take up their own wear, insure positive pressure or vacuum.



2-WING TYPE. Vacuums to 29.9"; pressures to 25 lbs.; displacement to 40.8 cfm. Automatic wing adjuster forces steel blades to meet cylinder wall, no sticking.

Write for 16-page catalog and blueprints of typical applications on Leiman rotary positive pumps—choice of industry since 1889.

SEE OUR CATALOG IN SWEET'S FILE

LEIMAN BROS., INC.
167 Christie Street, Newark 5, N. J.

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MASS production of fine gears is an accomplishment that requires the ultimate in manufacturing facilities and experience. And it's all here at Fairfield—metallurgical department, batteries of the most modern machines, complete heat treating equipment, all operated by skilled craftsmen producing truly fine gears. Here is more than 30 years of experience translated into the gear-making "know-how" that is essential to manufacturing high quality, dependable gears.

Our facilities are complete for producing gears for a wide variety of applications. Why not consult Fairfield on your next gear problem? Your inquiry will receive prompt attention.

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WORMS AND WORM GEARS

FAIRFIELD MANUFACTURING CO.
2335 S. Concord Road Lafayette, Indiana
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South Bend 2-H Turret Lathe less electrical equipment **$3190** f.o.b. factory

SOUTH BEND TURRET LATHE VALUE

Speed, accuracy, ease of handling, durability, low operating costs and minimum of maintenance are some of the features that make the South Bend No. 2-H a better turret lathe value. Takes 1" through collet, 1⅜" through spindle, 16¼" over bed. Full quick change gear equipment provides 48 power feeds each for turret ram, universal carriage and cross-slide, plus 48 thread cutting feeds. Prompt delivery — time payment terms available. Write for catalog.

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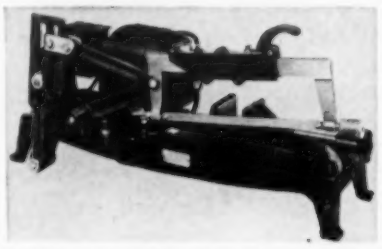
ELECTRIC FURNACES
temperature is held to ±3° F

Available for maximum temperatures of 2000 and 2300° F, Dyna-Trol electrical furnaces will reproduce any time-temperature curve to within ±3° F. They have automatic compensation for line voltage fluctuation and can be used for calibration and instrumentation. Temperature indicating and controlling device will hold or cut off temperatures to ±2 per cent of full scale reading. Vertical zone temperatures can be completely and accurately equalized at any time-temperature curve. More than 40 standard models are available, in addition to special types. Made by **L & L Mfg. Co.**, Chester 6, Pa.

▲ For more details circle NED-613 C4 on enclosed inquiry slip ▲

PORTABLE POWER HACKSAW
cuts up to 2¾-in. stock



Portable Dymond power hacksaw is suitable for cutting steel, tool steel, channels, pipe, conduit, aluminum, brass and bronze. It does not require bolting or clamping down for operation and weighs 65 lb. Cutting action is on the forward blade stroke and automatic lift and relief of pressure are provided on the return stroke. Automatic stop allows saw to be set to desired cut and left unattended during the cutting operation. Vise holds stock up to 2¾ in. and is adjustable to cut 15, 30 or 45-degree angles. Operation is from a standard 110-v power source. Made by **La-Roy Industries, Inc.**, 812 S. Fowler St., Howell, Mich.

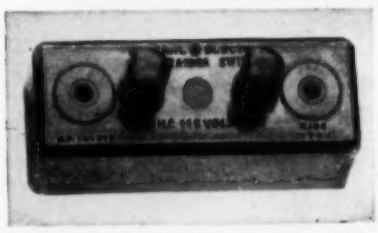
▲ For more details circle NED-614 C4 on enclosed inquiry slip ▲

MULTIPLE SURFACE FILTERS
have up to 720 sq ft filter area

Filter areas up to 720 sq ft and cake space up to 35 cu ft are available in these large capacity filters which utilize a medium of high temperature - resistant porous stainless steel. Container can be either carbon steel or stainless steel for corrosive service, and compact design allows steam jacketing, high pressure or sanitary construction and ease of cleaning. Filters are used for clarification service and solids collection in service with such diverse fluids as water, petroleum products and molten metals. Photo shows unit with 30 sq ft of filter area housed in container 12 in. diameter by 20 in. long. Made by **Micro Metallic Corp.**, 46 Sea Cliff Ave., Glen Cove, N. Y.

▲ For more details circle NED-615 C4 on enclosed inquiry slip ▲

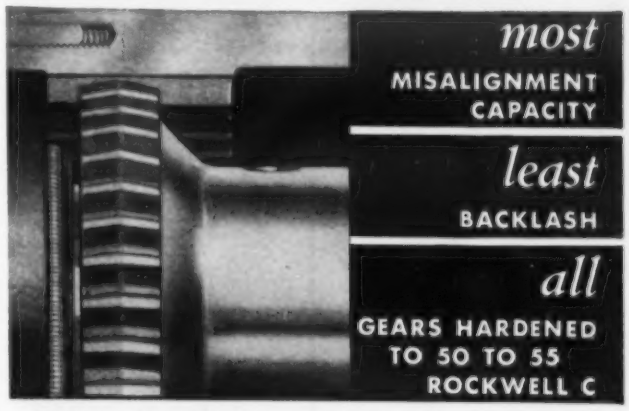
STARTING & OVERLOAD SWITCH
for fractional horsepower motors



Where line current overload protection is required, fractional horsepower motors can be controlled with this manual starting and overload switch. Essentially a start-stop switch with manual reset overload, totally-enclosed unit finds practical application on washing machines, clothes dryers and power lawn mowers. Overload protection is provided by nichrome heater and nickel-alloy bimetal strip in tripping mechanism. Depressing start button during overload will not re-energize motor until overload condition is removed and bimetallic strip returns to normal position. Control measures 2⅞ x 1 1/16 x 1 3/16 in. and has two mounting holes to accommodate No. 6 self-tapping screws. Made by **General Electric Co.**, Schenectady 5, N. Y.

▲ For more details circle NED-616 C4 on enclosed inquiry slip ▲

AJAX DIHEDRAL COUPLINGS



Exclusive Ajax Dihedral tooth shape provides for maximum misalignment with tooth clearance (backlash) kept to oil film requirements. Positive oil seals keep lubrication in and dirt out. Write for catalog.

AJAX FLEXIBLE COUPLING CO. INC.
Incorporated 1920
WESTFIELD, NEW YORK
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. . . with a Clipper CONSAW

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The rubber made by Du Pont since 1932

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PENETROL saves PITTSBURGH STEEL CO. 1¼ mile steel trestle from destruction under excessive corrosive conditions!

AIR-DRYING OIL

1¼ miles of steel trestle . . . carrying endless strings of cars loaded with freshly-quenched granulated slag, that drip chemical and acid contaminated water on the structure continually . . . *yet it is safe and strong, in every joint and surface, because it's PENETROL protected!*

Here's what Jack Moreland, Supervisor of Painting, Pittsburgh Steel Co., Monessen, Pa., says: "This was a tough condition in 1941. We were becoming aware of the fact that thousands of joints and the large areas of flat surfaces in this trestle, were being subjected to rust and corrosion from many different sources.

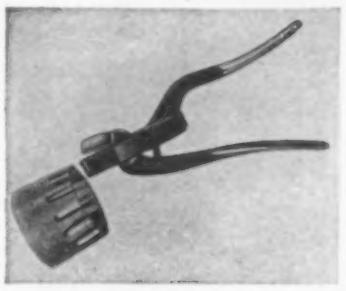
PENETROL was slushed into all joints and also applied to other pitted and rusted areas, during the time the surfaces were being cleaned for painting. The whole structure was given two coats of paint, each fortified with PENETROL. In 1947, the joints were okay . . . did not need special treatment . . . and we repainted the entire structure with paint to which we had added the protective qualities of PENETROL. In 1954, the joints and general structure still are in good condition, thanks to PENETROL!"

Ever since this outstanding performance, the Pittsburgh Steel Company Monessen Mill has used the PENETROL system of protection on all its steel structures. Ask us about this time-proved method, and let us help solve your rust and corrosion problems.

PENETROL PRICES: 5 Gal. $15.75; 30 Gal. $88.50; 55 Gal. $159.50, F.O.B. Hudson, Ohio. Free Literature! PENETROL® is manufactured by THE FLOOD COMPANY, HUDSON, OHIO

▲ For more details circle NED-620 C4 on enclosed inquiry slip ▲

HAND PIPE CRIMPER
for sheet metal pipe up to 20 gage



Designed for crimping the open end of sheet metal pipe up to 20-gage, No. 111 hand pipe crimper weighs 1 lb and is approximately 9 in. long. Forming jaw is 1½-in. long, and crimp can be formed as deep or as long as desired, simply by regulating amount of squeeze. Spring return opens the handles, which are polished and formed to fit the hand comfortably. Made by **Whitney Metal Tool Co.**, 400 Forbes St., Rockford, Ill.

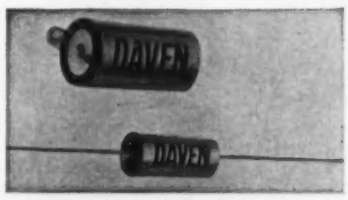
▲ For more details circle NED-621 C4 on enclosed inquiry slip ▲

CHLORINE FEEDERS
component proportions feed to flow

Chlorine can be fed to water or sewage line in a direct and preset proportion to flow rate, regardless of its fluctuation, by this corrosion resistant automatic proportioning component for chlorinators. Unit is operated by differential pressure coming directly from an orifice plate. Once an initial setting for a desired proportion of chlorine is made manually on the chlorine rate valve, the automatic proportioner takes over. Unit is for use with standard and high capacity vacuum type solution feed chlorinators. Two standard differential ranges are available: 0-50 and 0-100 in. water column. Made by **Fischer & Porter Co.**, 20 Jacksonville Rd., Hatboro, Pa.

▲ For more details circle NED-622 C4 on enclosed inquiry slip ▲

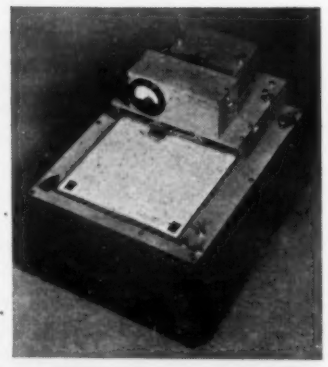
ENCAPSULATED RESISTORS
withstand —65 to 125° C cycling



In production of Super Davohm encapsulated Seald - Ohm resistors, air is used to keep molding material separated from resistance wire. These air pockets assure stability and eliminate shorted turns. Temperature coefficient of expansion of molding compound is matched with ceramic bobbin, the resistance wire and the metal terminals to prevent cracks or strains on wire during cycling. Resistors can be furnished with temperature coefficients below ±20 parts per million per degree centigrade and with accuracies to ±0.05 per cent. They meet MIL-R-93A specifications and withstand JAN-R-93, characteristic A, salt-water immersion test as well as temperature cycling from −65 to 125° C. Molding material resists 70,000-ft altitude pressures and will not cold flow at up to 150° C. Made by **Daven Co.**, Dept. SW, 179 Central Ave., Newark 4, N. J.

▲ For more details circle NED-623 C4 on enclosed inquiry slip ▲

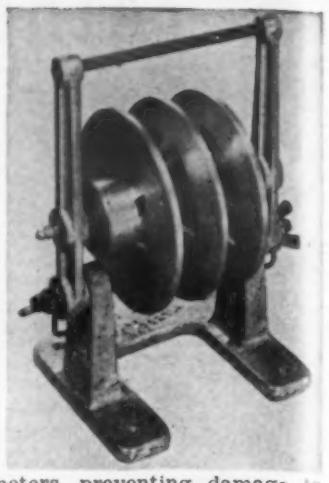
POLAR RECORDER
for directional device patterns



Recording of antenna patterns and those of other directional devices is function of the model PR polar recorder. Its chart table is driven by a selsyn motor which has a 36:1, 100:1 or customer-specified gear reduction. Diameter of polar chart is 8¼ in. Actual recording width of 4⅛ in. can be covered from 0 to 20 decibels up to 0 to 80 decibels. Interchangeable linear, square root and squaring scales are available. Frequency response is from 20 to 200 kc and over. Electronic circuit can be supplied for alternating or for alternating-direct current signal recording. Made by **Sound Apparatus Co.**, P. O. Box 586-N, Stirling, N. J.

▲ For more details circle NED-624 C4 on enclosed inquiry slip ▲

VARIABLE SPEED CONTROL



Variable speed control of V-belt and equipment up to a maximum 3 to 1 ratio is provided by this single lever controlled unit. Mechanically simple in design and sturdily constructed to withstand hardest service, models 1A and 2A Toledo variable speed controls have numerous unique features including; plain, smooth pulley, eliminating noise and vibration; stepless speed variation up to full 3 to 1 ratio; minimum pulley diameters are increased to transmit greater H.P., over entire range; new pulley design providing cylindrical bottom for V-belts which fixes minimum pitch diameters, preventing damage to belts and giving increased torque; single arm support, for easy belt application; large shaft, oilite bearings and lubricant reservoir; sector plate serving as dial indicator and additional locking medium; unusually attractive prices.

Wheel assemblies can also be purchased without mountings for application on machines providing built-in speed control.

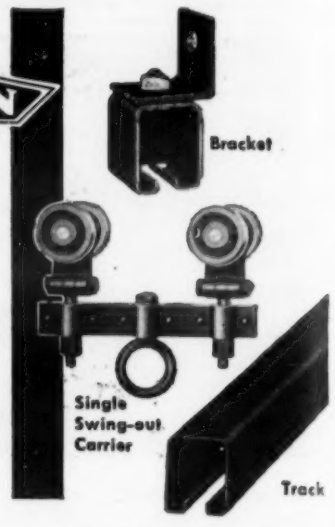
If you have a variable speed control problem, either on plant equipment or on machinery you build for sale, investigate the Toledo variable speed control . . . you'll be interested in its efficiency and low price. Ratios as high as 10 to 1 are available. **The Toledo Timer Co.**, 2224 Albion St., Toledo, O. Advt.

▲ For more details circle NED-625 C4 on enclosed inquiry slip ▲

COBURN

OVERHEAD CONVEYING EQUIPMENT

simple, easy installation



Coburn track, brackets and carriers are simple in design . . . present no complicated installation problems. In fact, your own plant personnel can easily handle the job. Inexpensive re-arrangement or extension can also be made at any time because of the section design of Coburn Overhead Monorail.

Write for Catalog #220 to Coburn Sales and Engineering, 56 Sterling Street, Clinton, Mass.

THE COLORADO FUEL AND IRON CORPORATION • Denver and Oakland
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COBURN PRODUCTS

PRODUCTS OF WICKWIRE SPENCER STEEL DIVISION THE COLORADO FUEL AND IRON CORPORATION CFI

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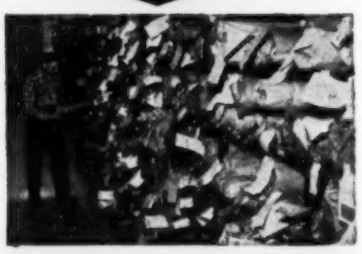
your WIRE CLOTH needs may be in stock at CAMBRIDGE



Supplies of many of the most frequently used types of industrial wire cloth are kept in our warehouse ready for immediate shipment to you. And even if the type you use is not in stock, we can schedule our looms to have your material in your plant without delay. Any metal or alloy; sizes range from 20 x 250 mesh up to 4" openings . . . and accurate mesh count is our pride.

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Why not have us quote on your next order for wire cloth in bulk or fabricated parts? Write direct or call in your Cambridge field engineer. He's listed under "Wire Cloth" in your classified telephone directory.

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OFFICES IN LEADING INDUSTRIAL AREAS

FREE Catalog! Gives full range of wire cloth available, shows fabrication facilities. Includes valuable metallurgical data. Write for your copy today.

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NEW ADJUSTABLE DRILL JIG
eliminates layout; cuts drilling time

Used for drilling holes through round stock and hex stock from ¼" to 2" and cap screws from ¼" to 1¼", the new Mathewson Adjustable Drill Jig eliminates layout and can cut drilling time on small lots to a fraction. And it eliminates the costs of special jigs for larger quantities. Holes for cotter pins, set screws, drive pins for bayonet joints, oil holes in tubular sections, and wiring holes in cap screws, are all typical of the operation that can be done more economically with this jig. Hole diameters range from .052" to .531", using your A.S.A. standard slip bushings. The hardened V-block has two 60-degree V's for centering round or hexagonal stock, one for ¼" to 21/32" diameter, one for 21/32" to 2" diameter. Adjustable stop for locating work longitudinally for drilling any distance from end, may be used on either side. Adjustable bushing carriers hold slip bushings and clamp work securely. Jig highly successful in permitting use of inexperienced drill operators. For circular write to: **Mathewson Machine Works, 22 Hancock St., Quincy, Mass.** *Advt.*

▲ For more details circle **NED-628 C4** on enclosed inquiry slip ▲

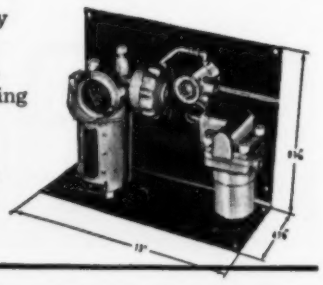
Steel-Maker...
extends bearing life 11 times!

ALEMITE OIL-MIST

Saves its cost each week-
eliminates lubrication down-time

Costly High-Speed Bearings Failed Week after Week on a key production machine. Costs piled up. The company turned to Alemite—installed an Oil-Mist unit costing little more than $100. *Result:* $220 saved first week. Today—11 weeks later—no signs of bearing wear; only three ounces of oil used per shift where a pound and a half of grease were required before!

Alemite Oil-Mist is a fully automatic system which atomizes oil into mist . . . distributes it through tubing to bearings . . . applies a constant uniform oil film to groups of bearings designed either for oil or grease lubrication.



delivers oil to bearings 3 ways

1. Oil-Mist as Such. For any type of anti-friction bearing—ball, roller or needle.

2. Oil in Spray Form. For open and enclosed gears and chains. Nozzle partially condenses mist so that it can be directed onto a concentrated area.

3. Oil-Mist Condensed. For plain bearings, slides, ways, vees, cams and rollers. In these applications, condensing fittings convert oil mist to liquid oil.

Get the facts NOW!

Let us send you the complete story on Oil-Mist. Specifications, models, typical applications, actual case histories. Get yours now. Write Alemite Division of Stewart-Warner, Dept. NED-34 1850 Diversey Parkway, Chicago 14, Illinois.

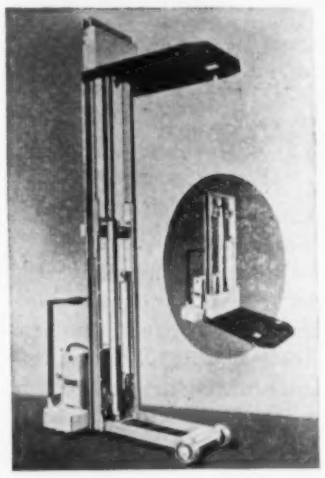
▲ For more details circle **NED-629 C4** on enclosed inquiry slip ▲

AIR-ELECTRIC GAGE
high speed, for delicate parts

Combining air gaging and electrical signaling, model AIR H-129 gage checks two OD's of a highly polished bearing simultaneously without actually touching them. A dual air snap gage is placed on the work. If both dimensions are good, a green light instantly flashes on the control panel and operator can go on to the next piece. If not, amber and red lights indicate under or oversize conditions and larger dials tell which dimension is off and by how much. Response time of the air gaging unit is speeded up through an air relay and an air-electric switch then transforms the value into an electrical signal. Made by **Federal Products Corp.,** 1118NR1 Eddy St., Providence 1, R. I.

▲ For more details circle **NED-630 C4** on enclosed inquiry slip ▲

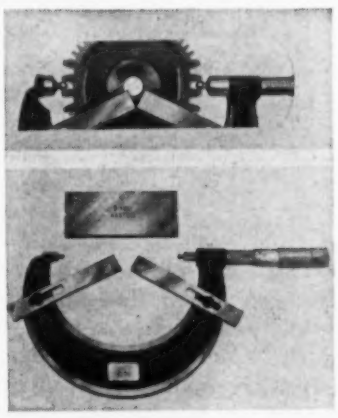
LIFT TRUCK
for high tiering of narrow skids



Added to line of Hydrolift trucks is model HHP designed specifically to handle narrow skid platforms for tiering to heights of 108 in. even in crowded areas. Feature is powered telescopic lift for tiering up to 2000 lb. For the small shop, lift truck is versatile in that it handles both horizontal and vertical movement of skid loads as well as such odd jobs as positioning dies and loading trailer trucks. Made by **Lift Trucks, Inc.,** 2427 Spring Grove Ave., Cincinnati 14, O.

▲ For more details circle **NED-631 C4** on enclosed inquiry slip ▲

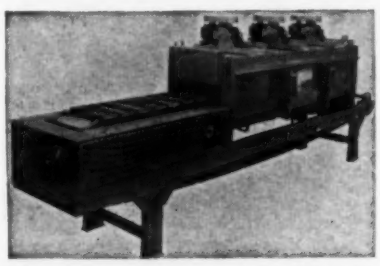
BALL TYPE MICROMETER
for gears and nonparallel parts



Opposing balls, accurate to 0.0001-in., are an integral part of this ball type micrometer, used in place of separate rolls in checking nonparallel parts and tooth thickness and pitch diameter on gears. Masters can be supplied, or the user can make comparative measurements with a perfect gear. Parallel guides assure gear leveling and positive readings. Standard ball sizes are ⅛ to ¼-in. in 1/64-in. increments. Other sizes are available on special order. Made by **AA Gage Co.,** 356 Fair St., Detroit 20, Mich.

▲ For more details circle **NED-632 C4** on enclosed inquiry slip ▲

CONVEYOR FURNACE
for heating operations to 1650° F



Conveyor furnace is designed for production heating operations such as tempering, annealing and stress relief at temperatures up to 1650° F. Variable speed drive permits parts to remain in heating chamber from 13 minutes to 2 hours 10 minutes. Temperature can also be closely controlled. Elements are of nickel chromium wire wound through ceramic refractories, and three fans circulate heated air uniformly through the heating chamber. Conveyor links and trays are fabricated from heat resistant alloy and are designed to permit small parts to be treated without falling from the conveyor. Made by **Hevi Duty Electric Co.,** P. O. Box 563, Milwaukee 1, Wis.

▲ For more details circle **NED-633 C4** on enclosed inquiry slip ▲

this time-study saves you money!

BUSINESSES SAVE HOURS EACH DAY

Actual time studies taken in hundreds of businesses show that an average of 18 seconds is required to make an "inside" speech contact through the switchboard. With *your own* AMPLICALL "clear line" *internal* communication system—you get *2-second speech contact* within and between departments. AMPLICALL frees busy switchboards for important outside calls—keeps personnel *on the job*, keeps talk terse—saves hours each day for the average business. AMPLICALL saves you money—pays for itself. There is a system to fit your special needs. Get the full facts today!

SEE YOUR PHONE BOOK
For your nearest AMPLICALL specialist, look under "Intercommunication" in your classified phone directory—or write direct for full information.

ELECTRONIC
AMPLICALL
INTERCOMMUNICATION

RAULAND-BORG CORPORATION
3515-D Addison Street, Chicago 19, Illinois

▲ For more details circle **NED-634 C4** on enclosed inquiry slip ▲

You Get Economical, Quick, Secure Fastening with Townsend Tapping Screws

You enjoy the economy of quality when you use Townsend tapping screws. They are made to provide an easy method of securely fastening metal, plastics, wood, asbestos and compositions with efficiency.

The use of Townsend thread forming screws eliminates costly tapping operations as the precision-rolled thread forms a mating thread when the screw is driven into the material. They are widely used in sheet metal, castings, and a variety of non-metallic materials. They may be removed and replaced without impairment of their holding power.

Townsend tapping screws are available in the types shown here in a variety of head styles with slotted or Phillips recessed and hex heads.

As representatives of "The Fastening Authority" Townsend engineers can draw upon 138 years of accumulated experience in wire drawing and cold forming to help solve your fastening problems. You can depend upon Townsend to give you excellent service in any quantity. For additional information write today for Tapping Screw Bulletin TL-88.

Townsend Company
Established 1816
NEW BRIGHTON, PENNSYLVANIA

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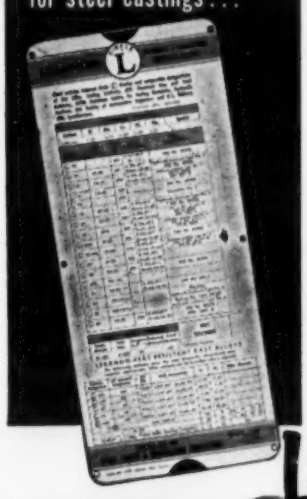
Here's the "handiest tool" to help you select the right material for steel castings . . .



your Lebanon Slide Chart

THIS new Lebanon Slide Chart gives you the reference facts you need on 19 carbon and low alloys and 17 stainless and corrosion-resistant alloys in regular use at Lebanon. Simply by adjusting the guide arrow at each grade reveals . . .

- *Nominal Analyses*
- *Minimum Mechanical Properties*
- *Standard Designations i.e. ACI, AISI, ASTM, Hydraulic Institute, SAE, Military and Federal.*

Just fill in the coupon below and your valuable Lebanon Slide Chart will be on its way to you.

Lebanon
CARBON, SPECIAL ALLOY AND STAINLESS STEEL Castings

Lebanon Steel Foundry
Dept. N, Lebanon, Pa.

Please send me the new Lebanon Slide Chart
Name_____
Company Name_____
Address_____

▲ For more details circle **NED-636 C4** on enclosed inquiry slip ▲

AGASTAT

Compact . . . Dust-Proof

TIME DELAY RELAYS

solenoid actuated—pneumatically timed

Introduces time delays into a-c or d-c circuits. Easily adjusted to provide delays ranging from 0.1 second to five or more minutes.

The AGASTAT is small, light, and operates in any position. Dust-proof timing chamber assures long operating life with a minimum of maintenance.

Write for Bulletin. Dept. A1-35

AGA

Division of Elastic Stop Nut Corporation of America
1027 Newark Avenue, Elizabeth 3, New Jersey

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HAVE A SPECIALTY WIRE PROBLEM?

Whatever it is . . .

WORK WITH WEBB and get the answer!

Here are three typical examples of how Webb specialists helped solve manufacturers' problems by selecting the grade, analysis and finish of wire that best met the requirements:

A KNOTTY PROBLEM

A manufacturer of wire fishing leaders had trouble with breakage when knots were tied. Webb specialists provided the answer—a wire of high tensile strength, yet ductile enough to withstand knotting.

SPRING TONIC

Tiny jewelry springs require proper tensile strength and constant uniformity. Webb stainless Spring Wire, Type 304, met all the requirements for this manufacturer.

BEARDED TWINS

Spring beard needles demand proper breaking strength, correct "springiness" and ability to harden uniformly. Webb high carbon Needle Wire filled the bill for this company.

WRITE TODAY—for our new booklet, "A Look at Wire Making the Webb Way." No obligation.

THE CARPENTER STEEL COMPANY • WEBB WIRE DIVISION
17 Liberty St., New Brunswick, N. J.

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quick to stick no need to lick!

AVERY Kum Kleen self-adhesive LABELS

THE EASIEST AND MOST ECONOMICAL LABEL YOU CAN USE!

• TRADEMARKS • INSTRUCTIONS
• GUARANTEES • "BUY" FEATURES
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SAVE YOU TIME - MONEY!

An Avery label specialist will gladly explain how you can use Kum-Kleen pressure-sensitive labels profitably in YOUR business. Mail the coupon now for complete facts.

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117 Liberty St., New York 6 • 1616 S. California Ave., Monrovia, Cal.
608 S. Dearborn St., Chicago 5 • Offices in other principal cities

☐ Please send case histories and samples
☐ Tell us about your electric label dispenser
☐ Have the local Avery man call

Name
Title
Company
Address

▲ For more details circle NED-639 C4 on enclosed inquiry slip ▲

AIRCRAFT BOLTS
cold working prolongs life

Internal wrenching fasteners of aircraft alloy steel, named MS bolts, give 16,000 hours service as against 8000 hours given by a previous type. Because of cold working in the fillet area under the head, fatigue life under standard laboratory test is raised from 30,000 to 65,000 cycles. Cold working is done after heat treatment. Illustration shows largest and smallest sizes available. They are 1½ and ¼-in. diameter, respectively. Made by **Standard Pressed Steel Co.**, P. O. Box 581, Jenkintown, Pa.

▲ For more details circle NED-640 C4 on enclosed inquiry slip ▲

RADIAL SAW BLADES
carbide-tipped mass-produced type

Mass-produced carbide-tipped radial saw blades which will cut hard or abrasive materials without damage are particularly suited for use in crating and similar shipping room operations as well as for cut-off saws in furniture plants and pattern shops. Tips are precision-brazed to tool steel blades, with precision-ground clearances on the teeth sides. This eliminates need for setting or swaging the teeth, minimizing friction and power loss and reducing danger of kickbacks, since only the carbide cutting edges contact the work. Blades, which are suited for use with power feed attachments, are offered in 10, 12 and 14-in. diameters to fit standard arbors and in 24, 30 and 36-tooth types, respectively. Made by **Rockwell Mfg. Co.**, Delta Power Tool Div., Dept. HD-H31, 400 N. Lexington Ave., Pittsburgh 8, Pa.

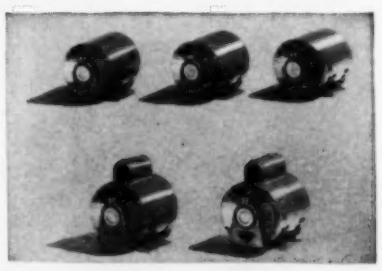
▲ For more details circle NED-641 C4 on enclosed inquiry slip ▲

SEALED SWITCH BUSHING
has silicone rubber diaphragm

Sealed switch bushing is designed for toggle switches, telephone switches or circuit breakers and has silicone rubber diaphragm bonded to the stainless steel handle and stainless steel bushing. Diaphragm is tested from −40 to 150° C at a maximum pressure of 90 psi. At ambient room temperature diaphragm has been tested statically without failure at 240 psi. It has also been tested at 150,000 cycles of throw of the handle without leakage at 90 psi. Maximum deflection angle is ±25 degree arc. Bushing is keyslotted on the outside for radial location and has a diameter of 15/32-in. It is threaded with 32 threads per inch. Made by **Krautter-Weber Tool Co.**, Switch Dept., 69-77 Twelfth Ave., Newark 3, N. J.

▲ For more details circle NED-642 C4 on enclosed inquiry slip ▲

FAN MOTORS
split-phase, capacitor-start types

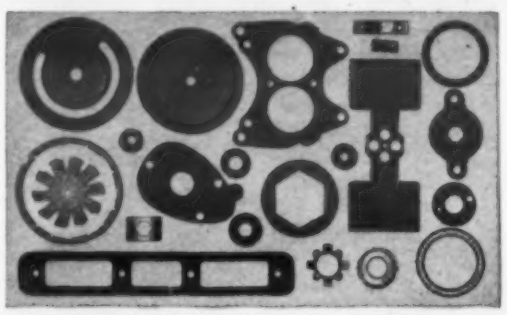


Two-speed fractional horsepower motors designed for use on evaporative-cooler, attic, air-circulating and window fans are lightweight, have resilient bases and can be mounted in any position. Split-phase and capacitor-start types with speeds of 1725/1140 rpm make up the line. Former are rated at 1/6, ¼, and 1/3-hp, 115 v 60 cycles, while latter are rated at ½ and ¾-hp, 60 cycles, 115 or 230 v. Single speed motors for fan applications are also available in these ratings. All motors are rated for 50° C temperature rise and are available with or without automatic-reset thermal protection. Blue-gray finish resists high humidity, heat-cold shock and abrasion. Made by **General Electric Co.**, Schenectady 5, N. Y.

▲ For more details circle NED-643 C4 on enclosed inquiry slip ▲

GOT A PRODUCTION OR DESIGN PROBLEM?

• GASKETS • PACKINGS • WASHERS
• SEALS • SHIMS • BUSHINGS • "O" RINGS



80 YEARS OF AUBURN "KNOW HOW" HAS THE ANSWERS!

Yes . . . over 80 years experience in engineering, designing, fabricating and production qualifies Auburn to help you find the ideal answer to your problem. Where gaskets, washers, and other sealing devices are concerned, Auburn engineers are tops in the field.

Their know-how is yours—for the asking. We are tooled to fabricate in virtually any material:

Leather, Asbestos, Teflon, Silicone Rubber, Neoprene, Rubber, Cork, Fibre Compositions, Phenolics, Felt, Cloth, Paper, Cardboard, Plastics, Brass, Steel, Copper, Aluminum, Other Special Materials.

Send us your specifications or blueprints. You'll receive quotations, recommendations without obligation.

AUBURN MANUFACTURING COMPANY
304 Stack St., Middletown, Conn.

Representatives: Atlanta, Ga.; Detroit, Mich.; St. Louis, Mo.; Los Angeles, Cal.; Minneapolis, Minn., Washington, D. C.; Cincinnati, O.

▲ For more details circle NED-644 C4 on enclosed inquiry slip ▲

THE LEWIS "6" PLASTICS INJECTION MOLDING MACHINE

POSITIVE SAFETY

"HYDRA-LOCK" is the safest, most powerful mold clamping device available today. Maximum safety also is assured by fast closing over-center toggle mechanism . . . safety interlocks . . . and emergency stop.

HIGH SPEED

Exclusive new "HYDRA-LOCK" clamp develops a 200-ton clamping pressure in tenths of a second. Large platens . . . compensating feed . . . and automatic molding cycle assure high-speed production.

MAXIMUM ECONOMY

Large projected area parts, formerly requiring considerably larger units, can be produced on the Lewis "6" at a fraction of the initial and normal operating costs.

GREATER CAPACITY

Intricate parts weighing more than 7-ounces can be molded at the rate of 2½ per minute. Heating cylinder will plasticize up to 60 pounds of polystyrene per hour.

LEWIS

1726-LW

Write for Bulletin 102 for complete details

THE LEWIS WELDING & ENGINEERING CORPORATION

14 INTERSTATE STREET • BEDFORD, OHIO

▲ For more details circle NED-645 C4 on enclosed inquiry slip ▲

Cleveland feeder table drive ready for installation. This particular drive has an over-all reduction ratio of 320:1.

SOLVE FEEDER TABLE TROUBLE WITH CLEVELAND DRIVES

● This is the dependable Cleveland worm gear feeder table drive that maintains steady feed rates at all times. The Cleveland design features a one-piece gear shaft construction which eliminates distortion of housings under high thrust loads. Thus, worm and gear are always in perfect contact to transfer power smoothly and steadily.

Free Bulletin No. 140 tells you more about this feeder table drive. Write for a copy today. The Cleveland Worm and Gear Company, 3283 East 80th Street, Cleveland 4, Ohio.

THE CLEVELAND WORM & GEAR COMPANY
Speed Reducers

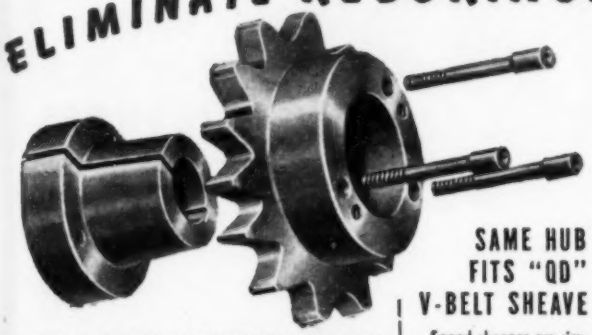
Affiliate: The Farval Corporation, Centralized Systems of Lubrication

▲ For more details circle **NED-646 C4** on enclosed inquiry slip ▲

FORT WORTH QD Roller Chain SPROCKETS WITH TAPERED SPLIT HUB

PATENT APPLIED FOR

ELIMINATE REBORING!



SAME HUB FITS "QD" V-BELT SHEAVE

Speed changes are simplified and "spare" sprockets can be carried more easily.

If your favorite distributor doesn't stock this new item, tell him about it. He'll reward you with better service.

"OFF THE SHELF" SERVICE AVAILABLE FROM INDUSTRIAL DISTRIBUTORS

Reboring of stock bore sprockets to fit various shafts is eliminated due to the various bores available in the QD hub. Installation and removal from the shaft is made easy by the tapered fit of the hub and sprocket. Hub assembly grips the shaft equivalent to a "press fit."

Catalog explaining additional advantages and construction details will be furnished on request.

OTHER FORT WORTH PRODUCTS
V-BELT DRIVES
SCREW CONVEYORS and ACCESSORIES
SCREW ELEVATORS
INDUSTRIAL FANS

FORT WORTH STEEL AND MACHINERY CO

Dept. 223, 3600 McCart, Ft. Worth, Tex.

▲ For more details circle **NED-647 C4** on enclosed inquiry slip ▲

Brand Spanking New!

MEYCO CONTROLLED CUT CARBIDE TIPPED SAFETY SAW

★ The latest addition to the famous MEYCO line of precision cutting tools. This new controlled cut, carbide tipped safety saw has many advantages: It's SAFE: will not pull hand into the blade, will not grab and kick-back work. It's ECONOMICAL: costs less to buy, longer life between grinds; cuts smoother, longer. Its CONTROLLED CUT regulates rate of feed, assures clean cut; makes chips instead of saw dust. Available at leading mill supply and hardware houses, or direct from factory. Write for fully descriptive literature and price list. Ask for Catalog No. 19.

W. F. MEYERS CO., INC., BEDFORD, INDIANA

▲ For more details circle **NED-648 C4** on enclosed inquiry slip ▲

PIPE & DRAIN CLEANER
drives up to 200 ft of cable

Self-contained and capable of driving up to 200 ft of sectional cable, the K-500 industrial pipe and drain cleaning machine makes use of assorted cutting tools. Machine is mounted upon a ball-bearing wheeled dolly and is operated by one man. Various power units, which include alternating and direct current electric motors, gasoline engines and compressed air motors, drive cable and cutters through any combination of traps or bends in lines from 1¼ to 12 in. An instant-acting clutch is used for starting, stopping and reversing. Cable is made in 15-ft sections and is offered in three diameters. A guide hose encloses the cable to prevent whipping or damage to surrounding areas. Made by **Kollmann Mfg. Co.,** 4802 Peach St., Erie, Pa.

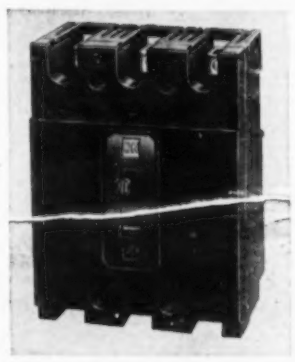
▲ For more details circle **NED-649 C4** on enclosed inquiry slip ▲

MANDREL NIBS
in 0.450 to 1.250-in. sizes

Standard line of cemented carbide unground braze-type mandrel nibs for drawing steel, aluminum and other tubing materials is now available. Seventeen diameters are included in the stocked line designated MN-450 to MN-1250. Range of sizes, 0.450 to 1.250-in. enables users to select size slightly larger than needed and then machine it to required tolerances. Special nibs can be furnished to specification. Made by **General Electric Co.,** Carboloy Dept., 11163 E. Eight Mile Rd., Detroit 32, Mich.

▲ For more details circle **NED-650 C4** on enclosed inquiry slip ▲

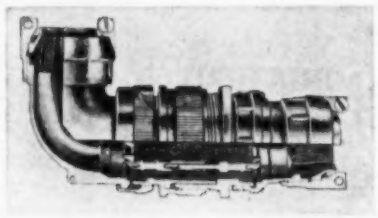
CIRCUIT BREAKER
handles up to 100-amp capacity



Panelboards, switchboards, load centers and all types of enclosures are applications of the 100-amp E-frame circuit breaker of one, two and three-pole construction. Compact easily-wired unit provides ample buss space and has solderless pressure type terminals. Quick-make, quick-break contact action is provided by thermal-magnetic tripping. On manual or automatic operation, common trip feature opens all contacts simultaneously whenever an overcurrent on any one pole occurs. Trip-free handle mechanism prevents breaker from being closed against faults. Breaker is available in ratings from 15 to 100 amp. One-pole model is rated at 125 v ac-dc, while two and three-pole models are rated at 250 v ac, 125/250 v dc. Interrupting current is 5000 amp. Made by **I-T-E Circuit Breaker Co.,** 1900 Hamilton St., Philadelphia 30, Pa.

▲ For more details circle **NED-651 C4** on enclosed inquiry slip ▲

ELECTRICAL CONNECTOR
is moisture, vibration & shockproof



Sensitive electronic circuits are protected from thermal shock, surface condensation and extreme vibration by the type E "environment resisting" electrical connector. Developed to meet high altitude performance requirements of aircraft, it is designed with ample working area between insert and grommet for all assembly and soldering operations. Individual wires can be removed or repaired with the connector in place. It is approved under military specification MIL-C-5015A (ASG). (*Editor's Note: In the original description of this connector, NED-978 A4 in Jan. '54 issue, it was stated erroneously that "Potting compounds supply the waterproofing." Actually, the feature of this connector is that moisture-proofing is accomplished without the use of potting compounds*). Made by **Bendix Aviation Corp.,** Scintilla Div., P. O. Box 188, Sidney, N. Y.

▲ For more details circle **NED-652 C4** on enclosed inquiry slip ▲

THE Improved **FLEX-A-FOAM FILTER MASK**

Your best ounce of protection against

IRRITATING DUST

HERE'S WHY:

★ **Workers wear it** Lightweight (just 1 ounce), snug, comfortable and easy-to-breathe through, Flex-a-Foam is the *one* respirator your workers actually *welcome*.

★ **It's super-efficient** Flex-a-Foam's pure latex filter protects against nuisance dust particles 100 times smaller than the eye can see!

★ **It's simple** Only four sturdy, long-wearing parts — all interlocking — all *unconditionally* guaranteed.

★ **And—it's economical** *Low first cost* — less than any other *quality* respirator on the market. *Low upkeep* — washable filter outlasts throwaway type by more than 100 to 1!

Dust Protection Your Workers Will Welcome and *Wear*

SAMPLE STILL ONLY $1.40 POSTPAID

FLEX-A-FOAM® FILTER MASK

THE GOGGLE PARTS COMPANY • CLEVELAND 13, OHIO

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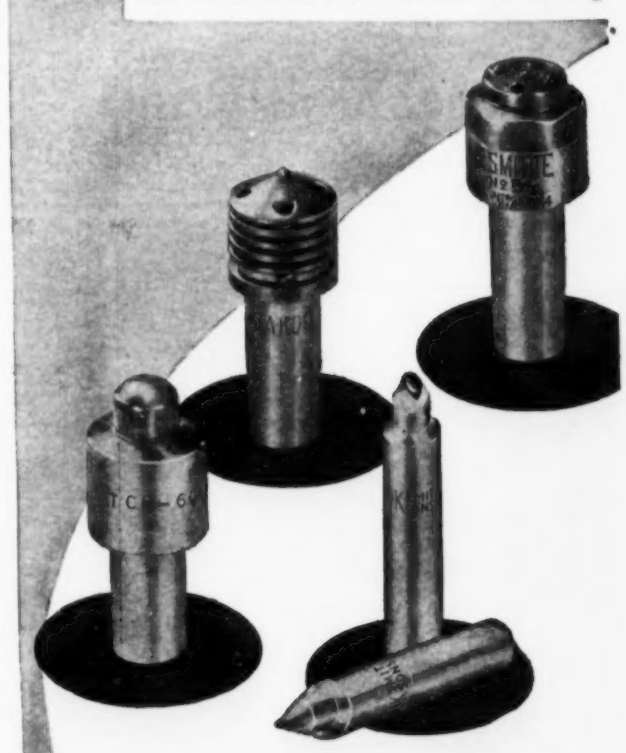
Competent Selection of Diamonds
Modern Plant with Modern Methods
Qualified Field Representatives, Strategically Located
Over 65 Years of Successful and Fair Dealing



Send for your copy of our Tool Catalog or perhaps you may wish to consult our engineering staff for assistance on *your* Diamond Tool problem.

J. K. SMIT & SONS, INC.
MURRAY HILL, NEW JERSEY

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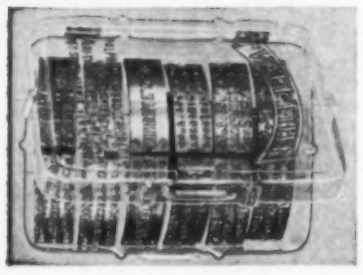
THE RIGHT BOX CAN DO A JOB FOR YOU

Special Equipment housed for protection, cleanliness, ease of transportation plus visual transparency—with Lite-TUFF PLASTIC BOXES



Lite-TUFF Standard Boxes and Containers of Non-Flam* lightweight plastic made of approved material are no fire hazard. They are available in a wide variety of compartment arrangements. LOW DIE COST ON CUSTOM MADE.

- Very tough—will not crack or shatter in normal use.
- Stainless steel hinges.
- Resistant to most chemicals—samples supplied for tests.
- May be beautifully heat embossed.
- All transparent or color combinations.
- Make your own compartment layout on our PLOT PLAN Sheets.
- State your problem—let us solve it.

Full information and Plot Plan Sheets sent upon request . . . Dept. B3

* Reg. U. S. Pat. Off.

SHOE FORM CO. INC., Auburn, N. Y.

For more details circle NED-655 C4 on enclosed inquiry slip

NEW SIZE 2U IMPACTOOL

This MIGHTY MITE is a real Multi-purpose tool

The new 2U Impactool will do all these jobs—and do them fast—

- run and remove nuts
- drill
- ream
- tap
- drive and remove screws
- drive and remove studs
- saw holes
- drill masonry
- bore wood
- extract broken studs
- run wire brushes

This newest and lightest Impactool has the time-proven Ingersoll-Rand impact mechanism that has an unmatched reputation for power and dependability in both air and electric Impactools.

Ask for a demonstration of this new, powerful little Impactool. You'll find it featured by leading automotive jobbers and industrial distributors from coast to coast.

SPECIFICATIONS

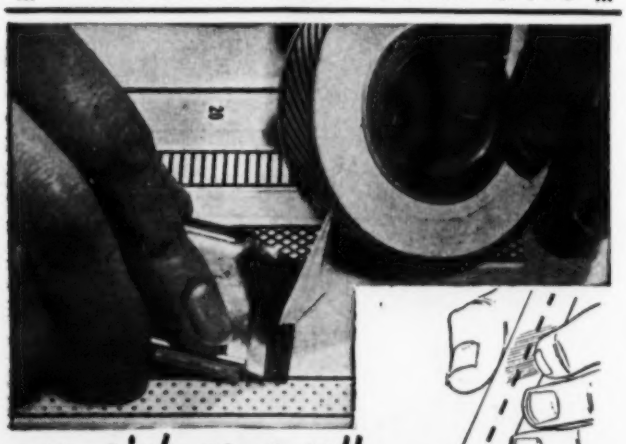
Capacity, bolt size	¼"	Impacts per minute	2100
Weight, less cable	5 lbs.	Square Socket Driver	⅜"
Free Speed	1750 rpm	Standard Voltage	110 volts AC-DC

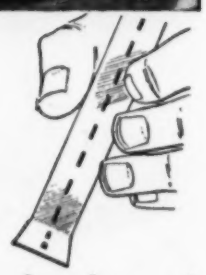
Ingersoll-Rand

11 Broadway, New York 4, N.Y. 18-20

Originators of Impactools—Air and Electric

For more details circle NED-656 C4 on enclosed inquiry slip





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You can be a professional "draftsman" in minutes (so can anyone in your office.)

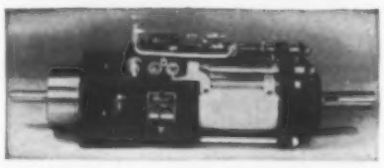
Everything you need to make an accurate, professionally drawn graph is pre-printed on self-sticking acetate tape! Lines, dotted lines, bars, people, coins, autos,—*everything!* Merely plot your dots—roll on whatever you want. Presto! A professional graph, without professional help, time or costs.

Write today for all the details on this revolutionary graph-making method! Chart-Pak materials also available for organization and flow charts, and office layout.

CHART-PAK, INC.
94C Lincoln Ave. Stamford, Conn.
Rush that Chart-Pak information to:
Name
Company
Address
City State

For more details circle NED-657 C4 on enclosed inquiry slip

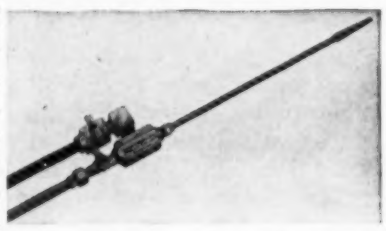
AIR-HYDRAULIC DRILL unit has stroke up to 4 in.



The 44-lb model 04 Holomatic air-hydraulic drill unit, adaptable for either automatic or manual cycling, is capable of production drilling up to ¾-in. holes in mild steel. Stroke is adjustable to 4 in. Unit can be made to stop with dwell, instantaneously retract, continuously cycle, skip drill, back feed and manually jog. Developed thrust on advance is 8.5 times air line pressure and on retract, three times line pressure. Infinitely adjustable feed rate on advance is 0 to 240 ipm and on retract, 0 to 100 ipm. Air pressure between 70 and 150 psi is required to operate. The 2¼ x ¾-in. diameter keyed pulley shaft mounts standard fixed or variable speed V-belt pulley drives and operates at 5000 rpm maximum. Mounting can be at any angle. Made by **Hause Engineering,** 809 S. Pleasant, Montpelier, O.

For more details circle NED-658 C4 on enclosed inquiry slip

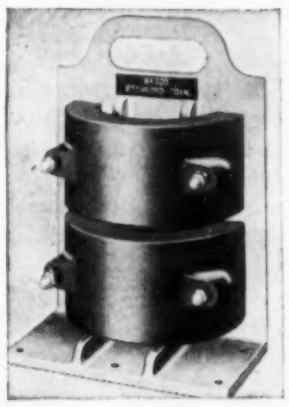
LUBRICATING & COOLANT SYSTEM now has 12-in. flexible nozzle



Improved version of the Atom-Lube lubricating and coolant system now has 12-in. nozzle of flexible tubing instead of soft copper tubing previously employed. Two interchangeable inner tubes for nozzle are also available. One, of copper, is used where nozzle is seldom readjusted; the other, of flexible plastic, is for frequent positioning of nozzle. Atom-Lube system, which applies to variety of machining operations, utilizes powerful air jet to atomize any desired cooling or lubricating liquid from water to heavy machine oils. It operates from existing air lines or small compressor. System is now supplied with 4 ft of ¼-in. ID plastic hose for coolant supply. Made by **Henry G. Thompson & Son Co.,** Dept. NED, Chapel & Mill Sts., New Haven 5, Conn.

For more details circle NED-659 C4 on enclosed inquiry slip

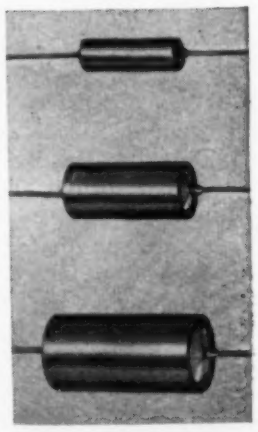
MAGNETIC PLATE SEPARATOR handles up to ¼-in. steel plates



Steel plates up to ¼-in. thick and stacked 8 in. high can be kept separated by this extra heavy duty magnetic separator to speed feeding into presses, shears and other metal fabricating machinery. It separates round, square, nested or odd shapes with equal facility, and highly polished or painted sheets and plates separate without damage. Device is constructed with two heavy duty magnets mounted on stainless steel reinforced aluminum mounting plate, 14 x 9½ in. The 5½-in. wide base is drilled for bolting to a bench. Made by **Basco Mfg. Co.,** 5-NED Woodside St., Stamford, Conn.

For more details circle NED-660 C4 on enclosed inquiry slip

MINIATURIZED CAPACITOR tolerances down to ± 2 per cent



Capacitance variance of type TI capacitors is less than 5 per cent from −80 to 200° C. Capacitance is substantially unaffected by frequency and has dissipation factor less than 0.0008. Capacitors are hermetically sealed with 100 per cent tin-coated glass-kovar end seals. Container ends are pressure-crimped to doubly secure seals. Capacitors are available in the complete RTMA capacitance series. Tolerances of ±10, 5 or 2 per cent can be obtained. Made by **National Capacitor Co.,** Dept. 2, 385 Washington St., Quincy, Mass.

For more details circle NED-661 C4 on enclosed inquiry slip

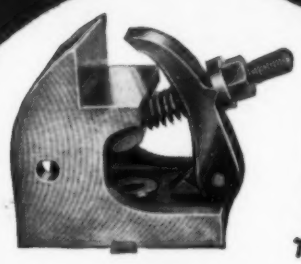
NEW "61" UNIVERSAL BACKSTAND IDLER

Rugged, versatile, low-cost unit permits speedy changeovers . . . lengthens belt life

The "61" Universal Backstand Idler by CARBORUNDUM is rugged enough for heavy production grinding, yet ideal for the shop where varied jobs call for frequent, fast set-up changes. Features include: Patented tracking device which eliminates need for aligning centers between idler pulley and contact wheel...quickly adjustable for contact wheels of varying diameters and widths, belts of varying length in any width from ½" to 8". Fingertip control of belt tension and tracking—from the operator's position—at no extra cost. Tension control is positive...springless. Sturdy double supports for the perfectly-balanced stainless steel idler pulley, plus sealed ball bearing mounting, insure vibration-free performance. Two models: Model 432 for floorstand operations (shown here)—$76; and Model 431—a smaller, more compact unit—for bench, wall or floor mounting—$61. For best results, top operating economy, use CARBORUNDUM's belt-saving "61" or "T-61" Contact Wheels and CARBORUNDUM® Brand Abrasive Belts with the "61" Universal Backstand Idler. Phone your CARBORUNDUM Distributor or Salesman (listed in the yellow pages under "Abrasives" or "Grinding Wheels") for complete information. Or write for folders—use the inquiry form provided by this publication or address **The Carborundum Company,** Dept. NED 82-45, Niagara Falls, New York.

For more details circle NED-662 C4 on enclosed inquiry slip

CUT SET-UP COSTS HUNDREDS OF WAYS WITH HART MILLING FIXTURES



"Masters of A Thousand Set-ups"

Eliminate the need for many special expensive jigs and fixtures.

You will save time and money on most set-ups with Hart Milling Fixtures. They hold round, hexagonal, octagonal or square stock, for miller, shaper, drill press and tapper; they reduce set-up time and speed production. Hart Milling Fixtures are made in four useful sizes, and designed to be used in horizontal or vertical position. Let us send you full description and prices.

Write for illustrated folder

WALTER W. FIELD & SON, INC.
39 Hayward St., Cambridge 42, Mass.

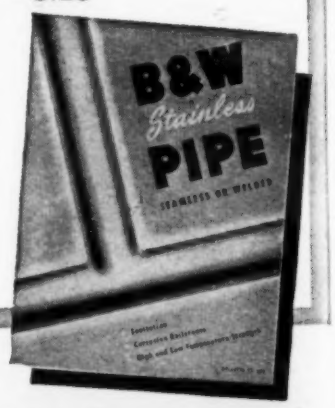
For more details circle NED-663 C4 on enclosed inquiry slip

How to Select Stainless Steel Pipe

(SEAMLESS OR WELDED)

Type — Grade — Size

New B&W Bulletin TB-356 discusses sanitation, corrosion resistance, high and low temperature strength; suggests best methods of bending and joining. Write for your copy today.



TA-4030(LP)

THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION
Beaver Falls, Pa.—Seamless Tubing; Welded Stainless Steel Tubing
Alliance, Ohio—Welded Carbon Steel Tubing

For more details circle NED-664 C4 on enclosed inquiry slip

THIS COMPREHENSIVE CATALOG MAY SAVE YOU VALUABLE TIME AND MONEY, HELP IMPROVE PRODUCTION

You'll find an efficient and economical answer to most of your heating needs in Catalog 50. It includes valuable application ideas and heat calculation data you'll find useful in your work. There are more than 15,000 standard Chromalox Units—most of them stocked for immediate application to your heating jobs.

Get your copy NOW from

Industrial Division
EDWIN L. WIEGAND CO.
7509 Thomas Blvd.
Pittsburgh 8, Pa.

See other ad on Pg. 4

CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

▲ For more details circle NED-665 C4 on enclosed inquiry slip ▲

CUTS PLATE ¾" x 10'-0"
(OTHER SHEARS FOR PLATE TO 20'-0")

THE LAST WORD IN SHEARS

No other shear is like Steelweld. No other shear has its many features. It is the last word in metal-cutting machines.

Consider: (1) Fatigue-reducing electric foot control; (2) Fast, easy Micro-Set Knife adjustment which enables smooth accurate cutting of all thickness metals; (3) Convenient front-adjusting back gauge; (4) Trouble-free mechanical hold-downs; (5) All-welded, rigid one-piece steel frame; . . . and many more advantages that make operation easy and assure top performance.

Built for all thickness metals to one inch and lengths to 20'-0".

STEELWELD Pivoted-Blade SHEARS CATALOG No. 2011

Send for free copy of catalog No. 2011.

THE CLEVELAND CRANE & ENGINEERING CO.
6632 East 282nd Street, Wickliffe, O.

STEELWELD SHEARS

▲ For more details circle NED-666 C4 on enclosed inquiry slip ▲

Best Buy in Hoists!

. . . and here's why!

1 Low operating cost.
2 Safe! The *only* hoist with self-locking, double worm gear which acts as its own load brake.
3 Steel from hook to hook—heavy, positive acting limit switches.
4 Dual voltage motors quickly convert from 220 to 440 volts or vice-versa.
5 Just hang it up, plug in, pull cord (one-hand control) and it goes to work.
6 Assured performance, backed by the exclusive Whiting Warranty Plan.
7 Most standard models shipped from stock.

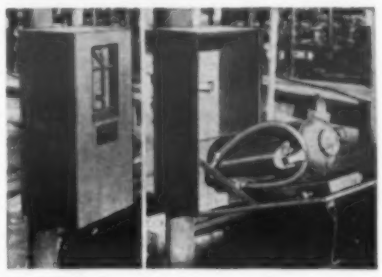
WHITING ELECTRIC CHAIN HOISTS

Send for Illustrated Bulletin H-112

WHITING CORPORATION
15660 Lathrop Ave., Harvey, Ill.

▲ For more details circle NED-667 C4 on enclosed inquiry slip ▲

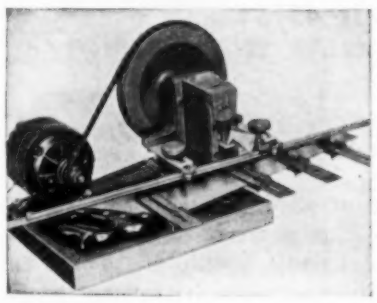
FIRE EXTINGUISHER CABINET
for industrial and automotive use



Keeping a fire extinguisher ready for immediate use, yet protecting it from the elements is function of model 2030 "all weather" cabinet. It is designed for industrial or automotive use and is adjustable to hold most 10 to 15-lb carbon dioxide and 20 and 30-lb dry powder extinguishers. A pull on the handle unlocks and opens the cabinet. Provision is made on handle for wire type seal to discourage theft. Cabinet measures 10½ x 13½ x 26 in. Made by **Eberhard Mfg. Co.**, 2736 Tennyson Rd., Cleveland 4, O.

▲ For more details circle NED-668 C4 on enclosed inquiry slip ▲

HAND SAW RETOOTHER
cuts away old teeth, forms new ones



In less than a minute, V-shaped steel punch of model 32000 automatic hand saw retoother cuts away old irregular teeth and forms perfect new ones, either rip or cross-cut, of any size from 4 to 16 points per inch. Saw handles need not be removed. Device has dial indicator to insure any desired tooth pitch from 0 to 30 degrees and can produce either straight or crowned toothed edge. It can be furnished with choice of motor or hand drive, latter being convertible to power drive at any time. Made by **Foley Mfg. Co.**, Dept. 35, 3300 Fifth St. N. E., Minneapolis 18, Minn.

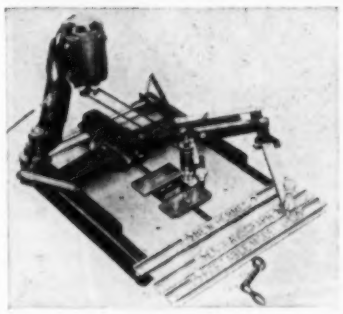
▲ For more details circle NED-669 C4 on enclosed inquiry slip ▲

THREAD REPAIR KIT
contains all necessary equipment

Thread repair kit No. 34CS contains all tools necessary for the wire insert method of screw thread repair in addition to an assortment of 25 commonly used insert sizes. Tools and inserts are fitted in a wooden box, which has a direction sheet glued inside the lid giving complete installation instructions. Sheet also shows part numbers for reordering purposes. Kit is designed for use in maintenance and similar work. Insert repair system is speedy, and restores threads in all types of material to original size with better than original strength. Made by **Heli-Coil Corp.**, Dept. NED, 1476 Shelter Rock Lane, Danbury, Conn.

▲ For more details circle NED-670 C4 on enclosed inquiry slip ▲

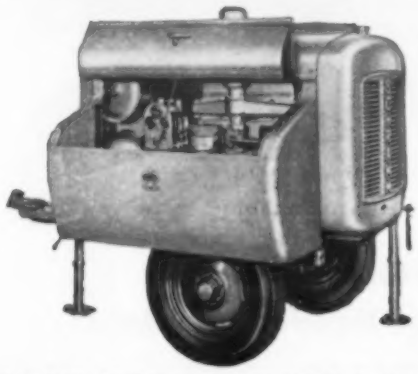
SMALL ENGRAVING MACHINE
can be set directly onto work



Portable chassis of model I-L engraving machine can be lifted off base and set directly onto work surface. Designed for engraving panels, dials, name plates, signs and even large instrument panels, machine is no larger than typewriter and is simple to operate. Quick-acting work holder clamps any size panel of steel, plastic or wood, and copy-holding slides are adjustable to any spacing desired, enabling operator to engrave a name plate with several lines. Pantograph arrangement allows changing of ratios without any disassembling. Fifteen different sizes can be engraved from one master letter. Regulator with micrometer assures uniform depth of cut on uneven or curved surfaces. Made by **New Hermes Engraving Machine Corp.**, Dept. 26, 13-19 University Pl., New York 3, N. Y.

▲ For more details circle NED-671 C4 on enclosed inquiry slip ▲

AIR FOR SHOP OR MAINTENANCE . . .



Model 60-C.F.M. Complete engine driven portable air compressor mounted on two wheel trailer with large size tool boxes.

AN IDEAL COMBINATION FOR . . .

- GENERAL SHOP UTILITY WORK
  Paint Sprays, Riveting Guns, Impact Wrenches, Grinders, Sanders, etc.
- FOR OUTDOOR MAINTENANCE
  Rock Drilling, Paving Breaking, Demolition, Trench Digging, Backfill Tampers, etc.

WRITE FOR BULLETIN AED

SCHRAMM, INC.
WEST CHESTER, PA.

▲ For more details circle NED-672 C4 on enclosed inquiry slip ▲

Does Your Plant Have Lines Carrying Corrosive Liquids?

Then You Should Know About

Rockwell-Nordstrom *Valves*

Rockwell-Nordstrom valves resist corrosion better than other valves because the vital seating area of a Rockwell-Nordstrom valve is never exposed to the line fluid. A thin film of lubricant covers the entire seating surface preventing corrosive fluids from acting upon this critical area.

In addition, Rockwell-Nordstrom valves are manufactured in a wide range of special corrosion-resistant metals.

For longer life and trouble-free valve operation, install corrosion-resistant Rockwell-Nordstrom valves at your plant.

There's a new bulletin prepared by Rockwell Manufacturing Company describing corrosion-resistant valves for industrial services. Mail the coupon below for your free copy today! Rockwell Manufacturing Company, Pittsburgh 8, Pa.

Rockwell-Nordstrom Valves
Lubricant-Sealed for Positive Shut-Off

Canadian Licensee: Peacock Brothers Limited.

ROCKWELL MANUFACTURING COMPANY 5432 B
Pittsburgh 8, Pa.
Please send me Rockwell-Nordstrom Valve Catalog V-217.
Name_____ Title_____
Company_____
Street_____
City_____ Zone____ State____

▲ For more details circle NED-673 C4 on enclosed inquiry slip ▲

NEW!

Manifold equipped with five simultaneous, instantaneous-acting cylinders.

"Helping Hands" for Hundreds of Jobs!

Now . . . miniature pneumatic cylinders . . . smaller than your fingers, with power to do hundreds of activating, holding, control, or feeding jobs. In electrical or mechanical testing, assembly, control, holding or work feeding setups . . . operated automatically or by foot valves . . . they help you produce better products, faster at lower cost by supplying workers with extra fingers and hands!

The Clippard Miniature Pneumatic Cylinder is just 2 1/16" long x 7/16" diameter with maximum 1/2" stroke and spring return; operates from air line on as little as 12 psi. 12-port manifold and complete line of fittings available.

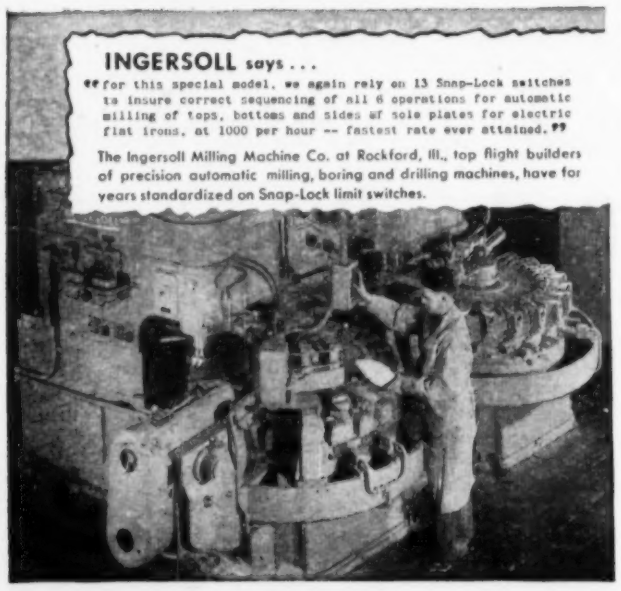
Illustrated literature, including power and static data, dimensional drawings, specifications and price list . . . free on request by writing.

Clippard INSTRUMENT LABORATORY, INC.
7390 Colerain Road, Cincinnati 24, Ohio
Manufacturers of R. F. Coils and Electronic Equipment

▲ For more details circle NED-674 C4 on enclosed inquiry slip ▲

SNAP-LOCK TRADE MARK

plays vital part in new plant AUTOMATION PLANS



Snap-Lock is the heavy duty limit switch—quick-acting, positive, dependable—built *by* machine tool builders *for* machine tool builders.

In the 15 years since we first designed Snap-Lock to meet our own machine tool needs, it has been adopted as the standard switch equipment by 4 out of 5 of all builders of precision operated machine tools. Hundreds of users of other types of equipment also specify Snap-Locks—where control is vital, where lasting and service-free life is more important than mere price.

If you have a switch problem, choose from the wide variety of Snap-Lock standard types with regular or special mountings or, if you need a special application, let our engineers help you design Snap-Lock into your product.

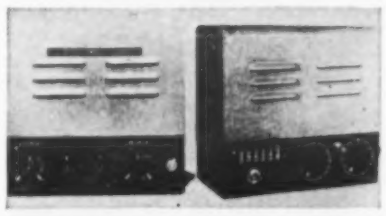
Ask for Engineering Bulletin EM-51

ELECTRICAL MANUFACTURING DIVISION
The NATIONAL ACME COMPANY
170 EAST 131st STREET • CLEVELAND 8, OHIO

ACME-GRIDLEY BAR and CHUCKING AUTOMATICS
1-4-6 and 8 Spindle • Hydraulic Thread Rolling Machines • Automatic Threading Dies and Taps • Limit, Motor Starter and Control Station Switches • Solenoids • Contract Manufacturing

▲ For more details circle NED-675 C4 on enclosed inquiry slip ▲

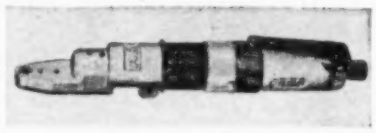
REPEAT CYCLE ELECTRONIC TIMERS
alternating and direct current units



Available for direct or alternating current operation, model 2 and 3 fully-enclosed repeat cycle electronic timers are suitable for wide range of industrial and laboratory controls and are stable and accurate under line voltage and temperature changes. Model 2 provides "on" periods ranging from 0.2 to 150 seconds and "off" periods ranging from 0.1 to 900 seconds. Model 3 "on" and "off" periods range from 0.01 to 6 seconds. Radio type tube and a voltage regulator charge two resistance-capacitance networks. During operation, one cycle automatically initiates the next. Made by **G. C. Wilson & Co.**, Dept. NED, 1950 Eighth Ave., Huntington, W. Va.

▲ For more details circle NED-676 C4 on enclosed inquiry slip ▲

RIGHT-ANGLE DRILL
head height is 43/64-in.



Right-angle air powered drill incorporates relocation and redesign of heavier duty bevel gearing to give a head height of 43/64-in., with corresponding ease of handling in close quarters. Drill has 5/16-in spindle offset and an overall length of 10 5/16-in. for the model 7438. Rotary motion is transmitted to the spindle by a series of precision needle-bearing mounted rotary gears. Ductile cast iron is used to strengthen the right-angle assembly. Models are available with speeds of 1450, 2100, 2500 and 4000 rpm. Threaded drill bits can be used, or external collets are available for drill sizes up to 1/4-in. Made by **Aro Equipment Corp.**, Erie St., Bryan, O.

▲ For more details circle NED-677 C4 on enclosed inquiry slip ▲

MOLDED PLASTIC WHEEL
capacity-rated to 2000 lb

Noiseless, nonsparking and shock-absorbent characteristics are attributed to this floor-protective molded plastic wheel which is capacity-rated to 2000 lb. Structurally equal to semisteel wheels, molded wheels reportedly outwear metal types in many operations. They are equipped with roller bearings and Zerk lubrication fittings. Available sizes range from 4 to 12 in. diameters. Made by **Hamilton Caster & Mfg. Co.**, 1668 Dixie Highway, Hamilton, O.

▲ For more details circle NED-678 C4 on enclosed inquiry slip ▲

Here's a Way to Cut Contact Costs

Yet Maintain High Performance Quality . . . USE **GENERAL PLATE** Composite Contacts

Illustrated are typical fabricated composite contacts and assemblies accurately manufactured to customers' specifications by General Plate from General Plate Composite contact material.

As pioneer manufacturers of composite strip, overlay, edgelay and Top-Lay contact metals, you are assured of the highest quality raw materials. Add to this the know-how of fabrication of these composite metals and you are assured of contacts that give you positive performance and long life.

In addition, by letting General Plate fabricate your complete contact assemblies, you will save money, time and trouble . . . needless equipment cost and problems of scrap disposal are eliminated . . . contacts and/or contact assemblies made to your exact specifications are shipped to you ready for installation.

General Plate Palladium or Palladium Alloy Rivets, solid or composite, offer high resistance to tarnish and corrosion coupled with low and uniform contact resistance over long periods of time.

When made as a composite rivet or part — palladium bonded to a base metal — they reduce costs because they permit the use of a minimum amount of noble metal. The palladium provides the necessary contact surface, the base metal reduces costs.

Write for complete information and catalog PR700.

METALS & CONTROLS CORPORATION
GENERAL PLATE DIVISION
83 FOREST ST., ATTLEBORO, MASS.

▲ For more details circle NED-679 C4 on enclosed inquiry slip ▲

Brighten your rough grinding picture with the "TOUCH OF GOLD"

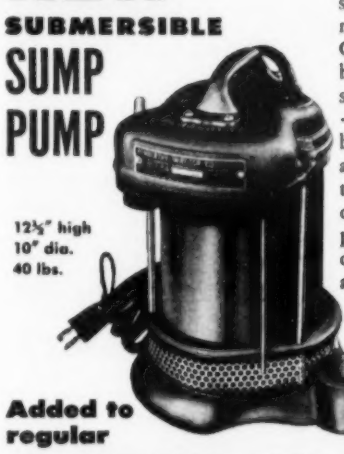
Norton wheels can help you bring every rough grinding job up to its proper money-making level. Because you can get Norton wheels that are exactly right — in abrasive, in bond and in every other detail — for best results on all your jobs. Your operators will like their easy-handling, clean-cutting action. And *you'll* like the way they grind off more metal per dollar, turn out better work and increase your production — bringing the real, profit-boosting "Touch of Gold" to your rough grinding.

Your Norton Distributor will help you select the right wheels for your jobs and machines. Ask him for our 54-page booklet: *"Rough Grinding."* Or write to NORTON COMPANY, Worcester 6, Mass. Distributors in all principal cities. *Export:* Norton Behr-Manning Overseas, Inc., Worcester 6, Mass.

NORTON ABRASIVES
Making better products . . . to make other products better

▲ For more details circle NED-680 C4 on enclosed inquiry slip ▲

NEW SUBMERSIBLE SUMP PUMP



MODEL 54, bronze fitted, for portable or stationary service—continuous or intermittent duty. 1/3 h. p. motor, G. E. components, has built-in overload protection—sealed motor and switch parts—permanently lubricated bearings. Actuated by reliable automatic heavy-duty controls—no diaphrams. Can be operated manually. Positive priming at all times. Many other features. Wide application.

Added to regular PENBERTHY line

3 models, 7 sizes of automatic electric sump pumps by the oldest and largest producer. Equipped with automatic, trouble-free features. Known for dependability. Write for complete details.

PENBERTHY INJECTOR COMPANY
Division of the Buffalo-Eclipse Corporation
1242 Holden Avenue, Detroit 2, Michigan
Established 1886

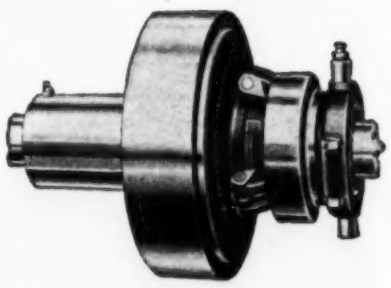
There's Certain satisfaction in PRODUCTS BY PENBERTHY

• EJECTORS
• EDUCTORS
• EXHAUSTERS
• SYPHONS
• JET PUMPS
• INJECTORS

▲ For more details circle NED-681 C4 on enclosed inquiry slip ▲

EDGEMONT TYPE **SF**
DRY PLATE DISC CLUTCHES

GEAR TOOTH OR PIN DRIVE for mounting V-BELT SHEAVES FLAT PULLEYS GEARS SPROCKETS OR DIRECT DRIVE



Backed by 40 years of clutch design and application experience

Type SF dry plate disc clutches are ideal for applications up to 3000 r.p.m. and in the types of mounting noted above. Type SF clutches are conservatively rated from 1/2 to 32 h.p. at 100 r.p.m. This design makes centrifugal force work with the operator to insure instant and positive release of the clutch. Single point, positive adjustment for liner wear is made without tools. Available for "built-in" engineered applications. Single or multiple disc types available according to service severity requirements. Write for Bulletin SF-5.

THE EDGEMONT MACHINE CO.
2201 HOME AVENUE • DAYTON 1, OHIO

▲ For more details circle NED-682 C4 on enclosed inquiry slip ▲

WINNEN INCINERATOR
pays for itself in less than a year! —burns wet or dry refuse

The Winnen Industrial Incinerator saves more than its cost in refuse hauling charges within six to twelve months, according to hundreds of satisfied users. Largest model completely consumes up to 400 lbs. per hour of half wet and half dry refuse. Available in four different sizes. Combustion is so complete there is usually less than a bushel of fine, white ash after a week of normal operation.

Ideal for use in or near residential areas, practically all smoke and odors can be eliminated through forced draft, a special ventilating system and secondary combustion. A hot, intense flame is delivered by twin burners using natural, manufactured, bottled gas or oil. Operating costs are amazingly low. Available without any burners for dry refuse, only.

Designed for installation either indoors or out. Absolutely safe! It is easily loaded and fired and can be left unattended during day or night. Virtually foolproof, the Winnen Incinerator comes completely equipped with the latest safety devices. Available with automatic timer to control fuel shut-off at pre-selected times, as well as prefab chimney, if required. Also special drying rack where large amounts of garbage or wet refuse must be burned.

Winnen Incinerators are shipped complete, knocked down, direct from factory within ten days of receipt of order. Complete, easy-to-follow instructions for assembling and installing are furnished. Any qualified maintenance man can have a Winnen Incinerator ready to operate within a day or less. Installation does not require a mason or furnace man. Materials and workmanship are fully guaranteed for 90 days.

Send for free folder, prices and further information. Use the inquiry card or write to Winnen Incinerator Co., 932 Broadway N. E., Bedford 90, Ohio. —*Advt.*

▲ For more details circle **NED-683 C4** on enclosed inquiry slip ▲

Look To The Leader For Lubricating Devices
GITS

40 Years' Leadership

Yes, for 40 years GITS has been setting the standard for industry... solving tough lubricating problems...earning the confidence of manufacturers . . . it's the reason people say, "Call GITS first".

Low Cost

Yes, GITS oil cups can do a complete lubricating job for you . . . prolonging bearing life, reducing maintenance costs, cutting down-time, boosting production... and GITS oil cups cost so little.

World's Largest Selection

Yes, only GITS can offer you such a wide range of standard stock sizes. From *just one* source you can get *all* lubrication devices in *any design* for *any purpose.*

Consistent Top Quality

Yes, GITS is known for uniform quality in design, materials and machining . . . this means constant, dependable performance for you. Inferior products can cost you time and money. Demand the best ...get GITS.

Write Today for **FREE CATALOG** *No. 60A Use it as your handy reference for lubricating devices*

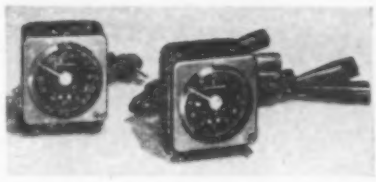
Oil Hole Covers, Oil Cups, Grease Cups, Bottle Oilers, Gauges, Gravity-Feed, Wick-Feed, Constant Level, Vibrating Rod Styles. Threaded or Drive-Type, Elbow or Straight.

GITS BROS. MFG. CO.

1833 S. Kilbourn Ave. Chicago 23, Ill.

▲ For more details circle **NED-684 C4** on enclosed inquiry slip ▲

TIMING INSTRUMENTS
show running and elapsed time



Total running and elapsed periods of any unit under test are indicated respectively by red and white pointers of timers made in two standard models. The 115-v, 60-cycle model for use on small commercial units using compressors of ¾ hp or less is designed to operate in series with tested equipment. The 230-v, 60-cycle model for use on large commercial installations using 230-v equipment operates in parallel with compressor motor. This model has set of lead wires for connection to motor terminals and another set for connection to power lines leading into units being tested. Hasp arrangement is provided on both for locking or sealing cover. Case is deep drawn aluminum finished in Hammerloy gray. Made by **Jas. P. Marsh Corp.**, Dept. P-1, 3501 W. Howard St., Skokie, Ill.

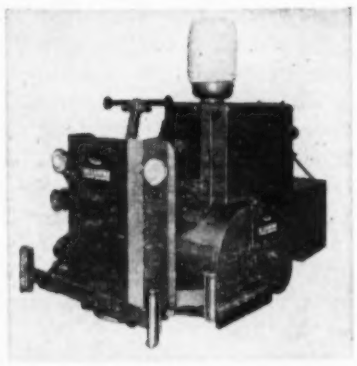
▲ For more details circle **NED-685 C4** on enclosed inquiry slip ▲

SAFETY GOGGLES
with clear or green curved lens

Such operations as spot welding, buffing, woodworking, inspection and hand tool operation are applications for Welshguard featherweight safety goggles. They are available with clear or green curved lens and can also be used to protect prescription goggles and by plant visitors. Acetate frame has full-vision spatula templates. Made by **Welsh Mfg. Co.**, 19 Magnolia St., Providence, R. I.

▲ For more details circle **NED-686 C4** on enclosed inquiry slip ▲

ELECTRIC FLOOR SWEEPER
sweeps 40,000 sq ft per hour



Two electric motors powered by storage batteries noiselessly operate this Electrisweeper, practical for bakeries, canneries, food processing plants and other places where carbon monoxide fumes and noise are objectionable. It can also be used in oil refineries, powder plants, shell-loading plants and other areas with high fire and explosion hazards. Unit will sweep in excess of 40,000 sq ft per hour. Made by **Wilshire Power Sweeper Co.**, Dept. A-3, 526 W. Chevy Chase Dr., Glendale 4, Calif.

▲ For more details circle **NED-687 C4** on enclosed inquiry slip ▲

SAVE 50% and more in Labor-Material with FencPainteR

For **WOOD - METAL BRICK - STONE CONCRETE**

Hundreds of industries and institutions all over America are using the FencPainteR applicator system of painting at immense savings. It's five times faster than brushing methods. Irregular and corrugated surfaces painted with the same facility and covering power as smooth surfaces. One concern painted 6 ft. wire fence at a total cost of only 20c per lin. ft. FencPainteR enamels contain only top-notch ingredients — go much farther — are more economical in the long run.

SPECIAL TRIAL OFFER — Including industrial size FencPainteR and 5 gal. FencPainteR aluminum enamel, 1 gal. solvent. Complete, only **$57.00.** Enough to do 300 lin. ft. of 6 ft. chain link fence. (Add $5.00 for gray, white or black — $10.00 for red or green).

THE ONLY ROLLER MADE WITH CAPILLARY ATTRACTION (PAINT HOLDING POWER)

FencPainteR Corporation

2314 W. Van Buren Street Dept. NE Chicago 12, Ill.

MAIL COUPON for new 32 page illustrated brochure with full details covering FencPainteR products and their use.

FencPainteR Corp., 2314 W. Van Buren St., Dept. NE Chicago 12, Ill.
☐ Please rush Free 32 page Brochure
☐ Send Special Trial Offer, complete
(Color desired.....) $.....
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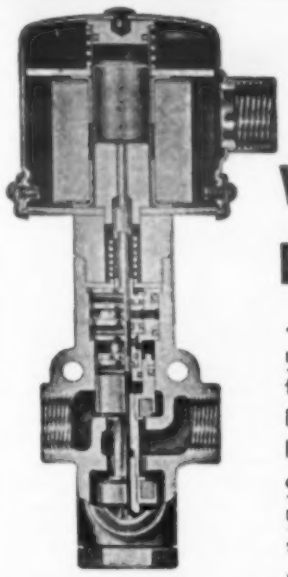
City ..... State .....

▲ For more details circle **NED-688 C4** on enclosed inquiry slip ▲



WHERE COST IS IMPORTANT

. . . long service life without maintenance is the deciding factor. Wherever comparative life tests and cost comparisons have been conducted in actual operation, based on user's own records, Crescent Valves* have shown material reductions in maintenance expense. In a few months, such savings generally amount to more than the purchase price. We invite comparison in your own plant.

*The products of Crescent Valve Co. include Solenoid 4-way, 3-way, and shut off valves in pipe sizes from ¼ to ¾ inch. Write for catalog 3C-1.

BARKSDALE VALVES

5125 ALCOA AVE., LOS ANGELES 58, CAL.

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MUELLER BRASS CO.
600 SERIES BEARING ALLOYS
FORGINGS • ROD • SCREW MACHINE PRODUCTS proving their quality throughout American industry

Mueller Brass Co. "600" series bearing bronzes are lightweight, high strength copper-zinc base alloys with excellent bearing and mechanical properties, non-galling and non-seizing characteristics and good resistance to corrosion. There are six members of the "600" series . . . one for every purpose. Write today for complete information about the MUELLER BRASS CO. "600" series alloys for forgings, rod or screw machine products.

MUELLER BRASS CO. 119-A

PORT HURON 27, MICHIGAN

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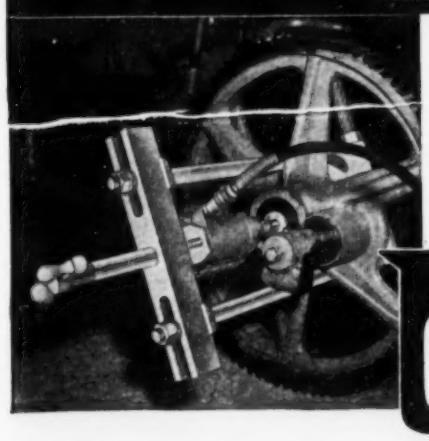
PUSH...PULL 75% FASTER 90% EASIER



WITH THE CENTER HOLE OTC

50 TON HYDRAULIC PULLER

Removes or installs bearings, gears, pinions, shafts, studs, wheels, pulleys, etc.—75% faster and 90% easier. This new OTC 50 ton ram is completely portable (weighs only 45 lbs.)—has remote control pump—interchangeable ram heads—and can be used as a production holding fixture. Also available in 17½ and 30 ton sizes. *Booklet describes complete line and uses of OTC equipment.*

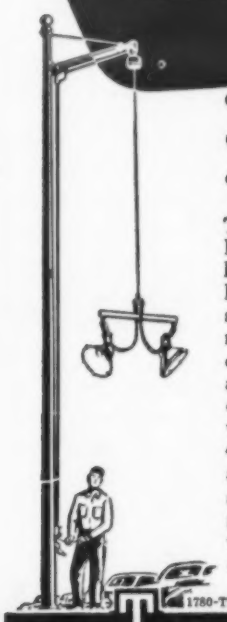
WRITE FOR FREE BOOKLET

OWATONNA TOOL COMPANY

436 CEDAR STREET • OWATONNA, MINN.

▲ For more details circle **NED-691 C4** on enclosed inquiry slip ▲

NEW OUTDOOR LIGHTING FIXTURE HANGER



- FEATURES RUGGED ALUMINUM ALLOY AND STAINLESS STEEL CONSTRUCTION
- PROVIDES MULTIPLE-CIRCUIT WIRING COMBINATIONS
- PERMITS SAFE GROUND-LEVEL LUMINAIRE SERVICING

The new THOMPSON 4-Pole Outdoor Hanger provides for total enclosure of both lead wires and operating line. Fabricated from aluminum alloy and stainless steel components for maximum corrosion resistance and load carrying capacity, this disconnecting and lowering device permits a variety of wiring combinations . . . 2 circuits 3-wire, 2 circuits 2-wire each, or 3 circuits 4-wire. THOMPSON 4-pole hangers are available in complete Unit Packages for pipe mast-arm mountings for multiple-luminaire installations in which 2 or 3 circuits are desirable or necessary.

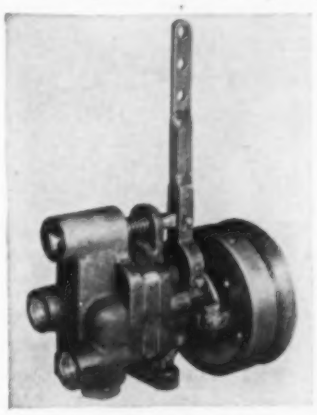
1780-TE WRITE TODAY FOR COMPLETE DETAILS

THE THOMPSON ELECTRIC CO.

1138 POWER AVENUE CLEVELAND 14, OHIO

For more details circle NED-692 C4 on enclosed inquiry slip

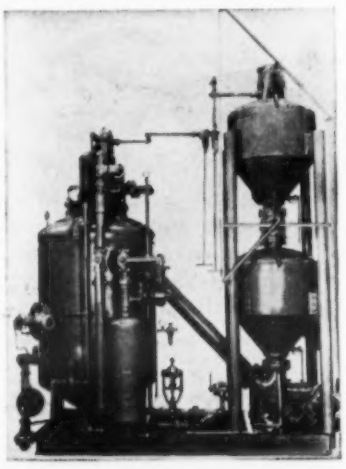
CLUTCH-OPERATED PUMP operates only upon demand



Pump that operates only when needed is designed with a fan belt pulley that idles freely on lifetime sealed ball bearings except when the all metal band clutch is engaged to provide hydraulic power. Made to provide power for underbody hoists, elevating end gates and snow plow controls on trucks, the pump can be installed on any truck where hydraulic power is required. It weighs only 18 lb and is mounted on top of the truck engine. Made by **National Lift Co.**, 36202 Main St., Ypsilanti, Mich.

For more details circle NED-695 C4 on enclosed inquiry slip

ACETYLENE GAS GENERATOR delivers up to 9000 cu ft/hour at a constant output pressure



Continuous supply of medium - pressure acetylene is delivered at rates up to 9000 cu ft per hour at constant output pressure by Oxweld NA-7 acetylene generator. Double hopper carbide supply and variable speed drive for carbide feed screw assure generation of just enough gas to meet immediate demand from consuming equipment, even though demand fluctuates over wide range.

Any desired output pressure between 8 and 13 psi can be preset on pressure controller. Pneumatic-mechanical linkage between controller and variable speed drive of carbide feed screw automatically regulates rate of generation. Automatic controls regulate carbide feed, water level, fresh water supply, temperature, pressure and discharge of water and residue. If water levels or temperature deviate from prescribed limits, generator shuts off. A hydraulic back pressure valve also prevents reverse flow from service line.

Generator is UL listed for Re-examination Service and is supplied as compact, skid-mounted, packaged unit. Overall size is 10½ x 6 x 13½ ft. Made by **Linde Air Products Co.**, Room 308-NED, 30 E. 42nd St., New York 17, N. Y.

For more details circle NED-696 C4 on enclosed inquiry slip

are Sweeping the Electrical Industry!

More and more manufacturers are getting into the swing to AMP FASTON connectors! Timers, clocks, switches, outlets, controls—all types of electrical components when equipped with AMP FASTON tabs not only *cost less* to produce, but offer all the advantages of easier, faster wiring on the line. To install, simply push FASTON on its mating tab. Wiring is accomplished in a fraction of the time required for screw-type terminal posts!

Triple spring action and wide wiping contact of AMP FASTON provides excellent electrical connection. U.L. approved, patented, AMP F CRIMP is voidless—gives high tensile strength and resists corrosion even under most humid conditions. Write today for information and samples!

Aircraft-Marine Products, Inc.
2100 Paxton Street, Harrisburg, Pennsylvania

For more details circle NED-698 C4 on enclosed inquiry slip

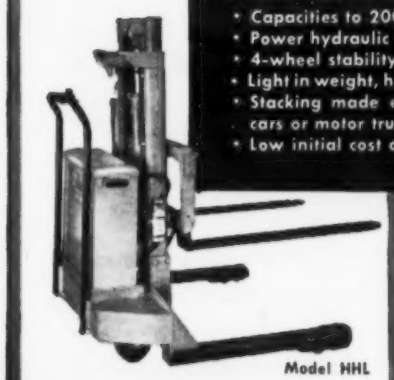
the multi-purpose lifting machine for the small shop

STUEBING DESIGNED • STUEBING ENGINEERED • STUEBING BUILT

Hydrolift Straddle Stacker

here are the FEATURES . . . you want most in a mobile stacker

- Capacities to 2000 lbs.
- Power hydraulic telescopic lift.
- 4-wheel stability.
- Light in weight, highly maneuverable.
- Stacking made easy inside railroad cars or motor trucks.
- Low initial cost and upkeep.



Model HHL

LIFT TRUCKS INC. W W W STUEBING CINCINNATI

The Hydrolift

fulfills the demand for an all-purpose hand truck in the average plant. It can be used for handling pallets, skids, dies, drums, barrels, sacked goods, and for numerous other non-routine jobs.

LIFT TRUCKS INC. 2423-2431 Spring Grove Ave. CINCINNATI 14, OHIO

For more details circle NED-693 C4 on enclosed inquiry slip

Use over and over again!

CABOT'S BRUSH CLEANER

- Won't evaporate!
- Non-inflammable!
- Safe for finest bristles!
- Economical!
- Quickly cleans old hardened paint brushes!

WRITE TODAY FOR FREE SAMPLE

See for yourself how Cabot's Brush Cleaner will restore your costly paint brushes to useful service.

SAMUEL CABOT INC. 332 Oliver Bldg. Boston 9, Mass.

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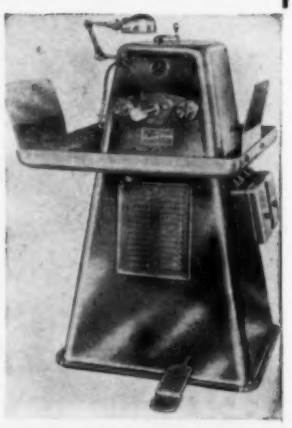
Budget Cut?

We Can Help You

Let us show you how to cut costs with the SUPERIOR Model "AL" HONING MACHINE



Infinitely variable speeds from 250 to 1150 r.p.m. with tachometer. Quick, easy adjustment.

Smooth running, ball bearing, hardened spindle.

Foot-controlled, disc-type clutch and brake.

220/440 volt, ¾ h.p. ball bearing spindle drive motor. 1/10 h.p. centrifugal-type coolant pump.

Magnetic starters. Service light.

Accepts standard mandrels, 3/16" to 3", in the same spindle. No adapters required. Wide honing range of each mandrel cuts original costs.

No metal-to-metal contact to wear out mandrels as well as stones.

Larger area stone cuts faster, lasts longer.

Hones over keyways and splines with standard mandrels and stones.

Consider all these ways the Superior Honing Machine saves you money and then use coupon to get free catalog and the name of your nearest-stocking dealer. Mail it now!

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1613 Elrono Street Elkhart, Indiana

Please send free catalog on Superior Honing Machines.

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For more details circle NED-694 C4 on enclosed inquiry slip

FAMOUS "CHEM-BOARD"* **CONVOY TOTE BOXES**

*Chemically Hardened Corrugated Board

SOLD THROUGH LOCAL INDUSTRIAL DISTRIBUTORS

Cost—weigh—50% to 60% less than steel. A wide range of sizes in standard and custom made NESTING, STACKING, VERTICAL TOTE BOXES. Write for complete information, prices, name of distributor in your area.

CONVOY RECORD STORAGE FILES

Sold Only by YOUR LOCAL STATIONER

Used by most famous names in industry and businesses of all kinds. CONVOY "CHEM-BOARD" files for record storage made in letter, legal, and 12 other sizes. Stack to ceiling, mate together. Call your local stationer or write for name of stationer nearest to serve you.

CONVOY, INC.

Canton 6, Ohio

P. O. Station B, Box 216-N

For more details circle NED-697 C4 on enclosed inquiry slip

SHENANGO *Centrifugal* CASTINGS ... KEY TO SAVINGS

SHENANGO means it's right . . . not almost right!

1) Machined parts must be finished precisely as you specify. Shenango's modern machining facilities and skilled workmanship make this operation almost a work of art.

2) *Parts start out RIGHT, too,* because they are produced by Shenango's advanced centrifugal casting process. This assures *tougher* parts with finer, pressure-dense grain, greater tensile strength, better elongation and freedom from sand inclusions, blowholes and other hidden defects.

You specify the part, metal and finish and Shenango does the rest. Send for Bulletin No. 150 covering nonferrous metal parts; Bulletin No. 151 covering Meehanite Metal, Ni-Resist and special iron alloys. *Address . . .*

SHENANGO-PENN MOLD COMPANY
Centrifugal Castings Division
Dover, Ohio
Executive Offices: Pittsburgh, Pa.

SHENANGO

ALL RED BRONZES • MANGANESE BRONZES • ALUMINUM BRONZES
MONEL METAL • NI-RESIST • MEEHANITE METAL

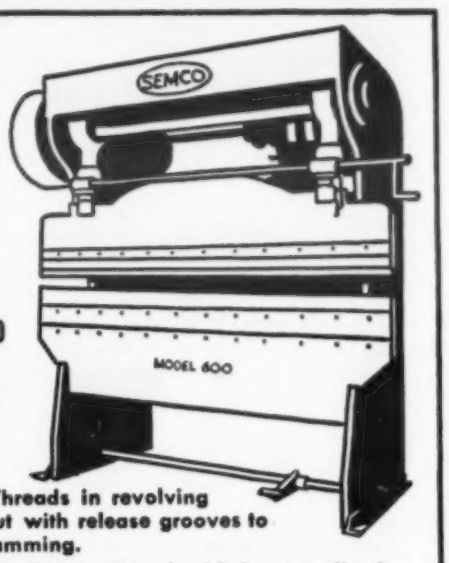
For more details circle NED-700 C4 on enclosed inquiry slip

NEW PRESS BRAKE

IN TWO SIZES 6 FT. and 8 FT.

LOW PRICED

BIG PRESS FEATURES



- Buttress Threads in revolving bronze nut with release grooves to prevent jamming.
- One Piece Construction (welded, normalized, machined in one piece).
- Ball and Roller Bearings throughout.
- Fine adjustment.

Made by the makers of famous SEMCO "34 YEAR" BRAKE DIES.

Write for NEW color folder and prices of PRESS BRAKES and 26 standard BRAKE DIE designs. Send die specifications for estimate.

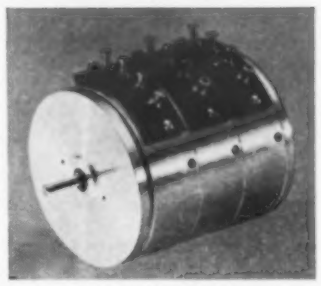
SEMCO

SERVICE MACHINE CO., INC.

202 MILLER STREET, ELIZABETH 4, N. J.

For more details circle NED-701 C4 on enclosed inquiry slip

LINEAR POTENTIOMETER
internal clamps permit ganging up to eight on a single shaft



Internal clamp bands permit ganging of up to eight type 754 two-in. diameter linear potentiometers on a single shaft giving a smooth unbroken outer surface. Phasing of the various cup sections is simple, yet accurate. Linearity is rated at ±0.15 per cent standard, ±0.10 per cent special. Resistance range is 800 to 100,000 ohms standard. High resolution, a nominal effective electrical angle of 356 ±0.5 degrees and a power rating of 5 w in a single cup section are other features.

Unit is manufactured to AIA standards and is normally supplied with a servo-flange mounting. Length of a single cup is 1 in. including the flange. Additional cup sections add 0.594 in. to the length. Shaft diameter is ¼ in. Typical applications include servomechanisms for machine tool and process controls and in guided missile controls and computing gunsights. Made by **Fairchild Camera & Instrument Corp.**, Potentiometer Div., Dept. NED-100-4, 225 Park Ave., Hicksville, L. I., N. Y.

For more details circle NED-704 C4 on enclosed inquiry slip

with....

CONE-DRIVE double-enveloping Worm Gear Speed Reducers!

'Double-enveloping'—wrapping worm and gear around each other—is the secret of Cone-Drive gear's compactness.

As a result, smaller gears can be used to carry a load when you specify Cone-Drive gears—up to ⅓ smaller housings, too.

If space saving is a design need, it will pay you to look into Cone-Drive gears and reducers . . . NOW.

Ask for Bulletin 8901-50

CONE-DRIVE GEARS

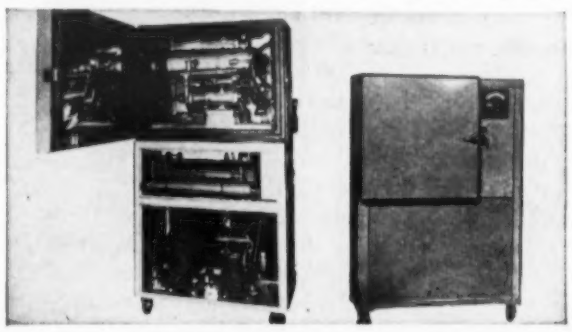
Division Michigan Tool Company

DOUBLE ENVELOPING GEAR SETS & SPEED REDUCERS 7171 E. McNichols Road • Detroit 12, Michigan

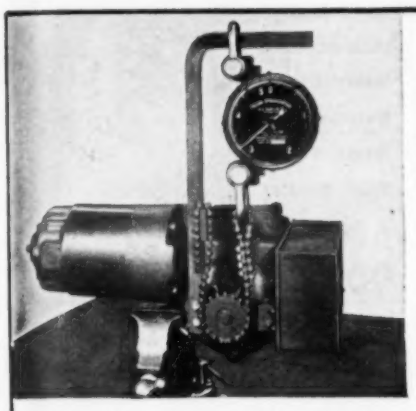
For more details circle NED-707 C4 on enclosed inquiry slip

ENVIRONMENTAL CHAMBERS
units have wide temperature range

Series of portable environmental test chambers and portable liquid chillers is equipped with free-rolling casters and requires no water connections. Dry chambers have working areas of 1 to 64 cu ft or larger and any temperature between −120 and 250° F can be held, controlled and recorded. Same series is also available as a temperature-controlled liquid chiller, at any point from −120 to 500° F. Heat removal capacity is from 300 to 50,000 Btu per hour. Cooling system is cascade type with semisealed refrigeration units which use Freon 13 and Freon 22 refrigerant gas. Special instrumentation, humidity control to 98 per cent and other features can be added. Left photo shows liquid chiller, while exterior of dry chamber is at right. Made by **Conrad, Inc.**, 60 W. Fourth St., Holland, Mich.



For more details circle NED-705 C4 on enclosed inquiry slip



DILLON Dynamometer checking torque of electric motor in simple bench test setup.

COMPACT

Fit into limited space measuring only 8¼x6¼x3". Weigh 8 lbs. 4 oz. Large, easy to read dial with maximum indicator hand.

EASY TO USE

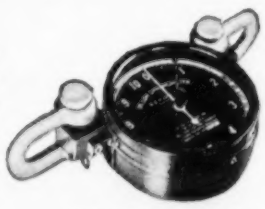
Not injured by accidental overload. Reads direct in lbs. 13 capacities from 0-500 lbs. up to 0-100,000 lbs. Including max. pointer and shackles.

DILLON TRACTION DYNAMOMETER

Calibrated on Certified Laboratory equipment. Highest quality workmanship and materials throughout.

COUNTLESS USES

Tests tensile strength of materials, indicates torque, static loads, tension in wire, rope, cable, etc. Thousands in use. Priced LOW. WRITE FOR LITERATURE AND FREE TENSILE STRENGTH COMPUTER.

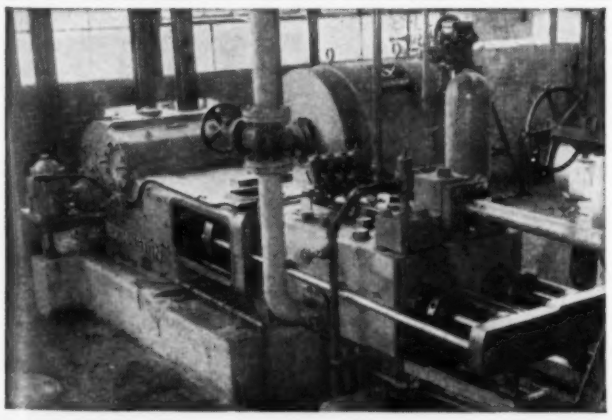


W.C. DILLON & CO., Inc.

Sales Reps: Some territories open—Write

14620NE KESWICK ST., VAN NUYS, CALIF. (Suburb of Los Angeles)

For more details circle NED-702 C4 on enclosed inquiry slip



Worthington Power Pump Driven by Star-Kimble Squirrel-Cage Motor

This Worthington Horizontal Duplex Power Pump at the South Bend Plant, Oliver Corporation is driven by a Star-Kimble standard squirrel-cage motor. Star-Kimble also engineers and builds motors for special industrial requirements in all fields, including machine tool, marine, and materials handling.

For full information on standard squirrel-cage motors, write for Bulletin B-201. Inquiries are invited on special designs.

STAR-KIMBLE

MOTOR DIVISION OF

Miehle Printing Press and Mfg. Co.

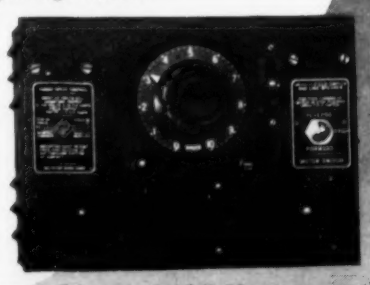
214 Bloomfield Avenue Bloomfield, N. J.

For more details circle NED-703 C4 on enclosed inquiry slip

Here are SOME of the advantages of **Variac** *Motor Speed Controls*

for D-C Shunt, Compound or Series Motors from A-C Lines

- ★ No electronic tubes—*no warm-up required—ready for instant use*
- ★ Extremely fast START — STOP — REVERSE
- ★ Very smooth control — *speed range 15:1; up to 100:1 with light or smooth loads*
- ★ Dynamic braking in larger models
- ★ High starting torque
- ★ No torque pulsations at low speeds
- ★ Simple to install
- ★ Very little maintenance
- ★ 9 models from 1/16th hp or less to 1½ hp



★ Low cost: Prices start at $75.00

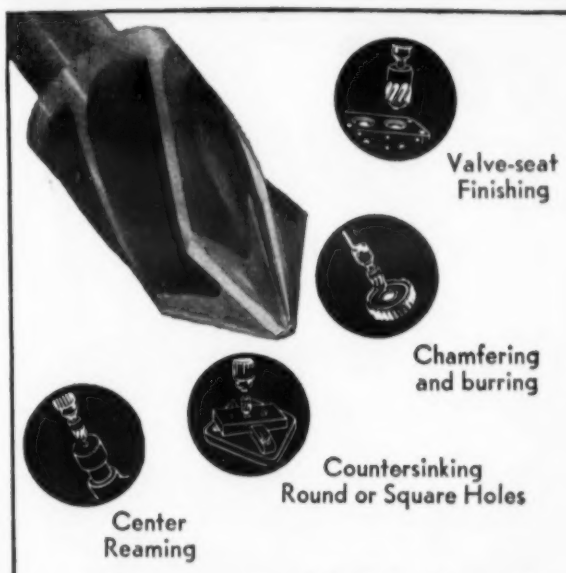
Write for the VARIAC Motor Control Bulletin

GENERAL RADIO Company

275 Massachusetts Avenue, Cambridge 39, Massachusetts, U.S.A.

NEW YORK 6 CHICAGO 5 LOS ANGELES 38

For more details circle NED-706 C4 on enclosed inquiry slip



4 jobs better with 1 basic tool!

FORD "Quad"

HSS chatterless countersink

Ford's exclusive job-engineered flute design, precise concentricity, greater rigidity, lower cost add up to faster production, better production, more profitable production. No secondary burs. Ideal for heavy duty applications. Write for details.

FORD "standard"

chatterless countersink

Engineered by Ford for peak operating efficiency commensurate with lowest possible initial tool cost. Ford's know-how makes possible a competitively priced tool without sacrifice of performance.

FORD *-- the complete line!*

HSS ground cutters, rotary files, countersinks
CARBIDE cutters, end mills, grinding burs

Complete Details. Operating Data

All specifications plus informative operational data on more than 300 FORD rotary tools contained in new FORD Catalogue No. 207. Write for yours!

FORD regrinding service adds tool life, reduces tool costs!

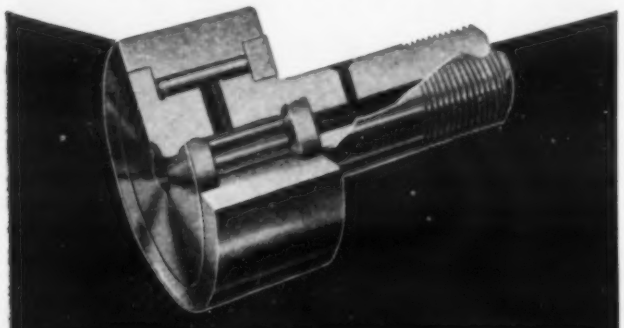
M. A. FORD MFG. CO., INC.

Pioneers in rotary tools for more than 30 years

721 West River St., Davenport, Iowa

For more details circle NED-708 C4 on enclosed inquiry slip

Improve Performance
of cam action with MULTIROL®
Cam Follower Bearings



Multirol CF Series Bearings are designed especially to insure greater precision performance in any cam actioned bearing application. They are built to provide the ultimate in radial capacity, shock resistance, space economy and longer bearing life.

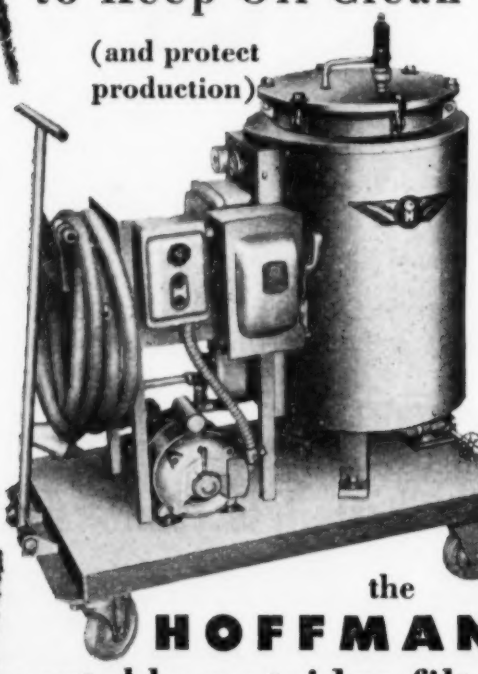
Send for McGill Catalog No. 52

McGILL® precision bearings

McGILL MANUFACTURING CO., INC. 101 N. LAFAYETTE ST. VALPARAISO, INDIANA

▲ For more details circle NED-709 C4 on enclosed inquiry slip ▲

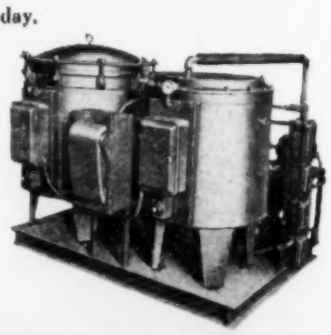
GOES ANYWHERE
to Keep Oil Clean
(and protect production)



the HOFFMAN portable cartridge filter

Fills the need for periodic, scheduled filtration of oils where quantity does not warrant separate, continuous filtration. Easily moved from one machine to another. Flexible hose with quick connecting couplings attaches to the oil supply of the machine. Operates on a recirculation basis for such time as is required to fully recondition the oil. For use on hydraulic oils (hydraulic presses, hydraulic machine tools, injection moulding machines, die casting machines) and quench oils. Two sizes: 30 and 60 g.p.h. capacities for repackable or throwaway cartridges. Fuller's earth or cellulose.
Write for Bulletin A-916 today.

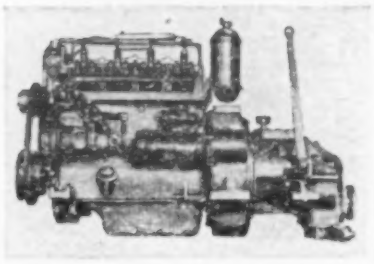
For Complete Purification of Used Oils —
HOFFMAN OIL CONDITIONER
25 to 600 g.p.h. capacity
Removes solubles and insolubles
Write for free Bulletin A-974



TOPS IN VALUE SINCE 1905 **Hoffman**
INDUSTRIAL FILTRATION EQUIPMENT & SERVICE
U. S. HOFFMAN MACHINERY CORP., 225 LAMSON STREET, SYRACUSE 6, N. Y.
In Canada: Canadian Hoffman Machinery Co., Ltd., Newmarket, Ont.

▲ For more details circle NED-710 C4 on enclosed inquiry slip ▲

FOUR-CYLINDER DIESEL ENGINE develops up to 45 hp at 2400 rpm



Medium duty four-cylinder diesel engine for both pleasure and commercial marine craft develops 35 to 45 hp at 2000 to 2400 rpm. With 3½-in. bore and 3¾-in. stroke, power plant displaces 144 cu in. and is available in direct drive type or with reduction gearing in ratios up to 3:1. Picture shows side with Bosch fuel injection system, 12-v heavy duty electric starting motor and generator, heat exchanger for fresh water cooling system and Joes reverse gear with optional reductions. Glow plugs for quick cold weather starting and removable dry type cylinder inserts are additional feature of this overhead valve engine. It is also equipped with oil cooler and filter, fuel filter, governor and fuel supply pump. Full pressure lubrication is used throughout. Made by **Red Wing Motor & Mfg. Co.**, P. O. Box 101, Red Wing, Minn.

▲ For more details circle NED-711 C4 on enclosed inquiry slip ▲

BACK PRESSURE CONTROL VALVES automatic, in ½ to 2-in. pipe sizes

Suitable for refrigeration use, in flooded systems and/or systems employing thermal expansion valves for liquid feed, type KD back pressure valves automatically maintain a constant back pressure on the inlet side, regardless of suction pressures at the valve outlet and load and demand changes. Because of multiple ported internal unit, valve has large capacity on low pressure differences. They are available in pipe sizes ranging from ½ to 2 in., with screwed ends and with or without a handwheel for manual pressure setting. Remotely controlled pressure setting arrangement is also available. Units are suitable for any back pressure from 0 to 75 psi, or pressures below atmosphere. Made by **A. W. Cash Valve Mfg. Corp.**, 6624 E. Wabash Ave., Decatur 60, Ill.

▲ For more details circle NED-712 C4 on enclosed inquiry slip ▲

Pipeless Metalworking Presses

American Steel Foundries, Elmes Engineering Div. —Main hydraulic circuit of metalworking press described in 6-page illustrated bulletin 1011 has no piping. High pressure fluid is conducted through short, direct passages drilled in structural parts. Maintenance and downtime are reduced.

▲ For more details circle NED-713 C4 on enclosed inquiry slip ▲

hydro-line cylinders series "J"

conform to J. I. C. standards
RUGGED . . .
Where it counts most!

CARTRIDGE . . . metallic rod-wiper, packing, bushing in one unit.
RUGGED BODY . . . all steel end caps and barrel.
PISTON RINGS . . . step-cut joint, long life, minimum leakage.
PRESSURE . . . 2,000 psi heavy-duty . . . 3,000 psi non-shock.
SIMPLICITY . . . no tie-rods . . . no retainer rings.

hydro-line *Manufacturing Co.*
5601 PIKE ROAD • ROCKFORD, ILLINOIS

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Alloy Fabrication is our Baby!

YOU NAME IT . . . Any processing equipment—autoclaves, agitators, condensers, baskets, evaporators, kettles or stills. Small experimental models or full-scale production equipment. Any size or shape—metal or alloy including stainless steel, monel, Hastelloy etc.

WE'LL MAKE IT! We'll follow your specifications . . . or help you develop them. Entirely new, unconventional equipment no problem. Tell us your requirements. We'll submit careful estimates without obligation. Write or wire for complete information to:

Emerson-Scheuring
TANK & MANUFACTURING CO., INC.
2071 Martindale Avenue • Indianapolis 7, Indiana

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These new insulated closure units are available in a wide range of sizes to meet every individual requirement. Designed for smart modern appearance as well as weather and watertight service, Overbeke-Kain access doors can be used on transformer vaults, weatherproof rooms, marine bulkheads, test rooms and similar applications. A readily adjusted or replaced neoprene rubber gasketing assures a positive seal at all times.

Standard units are all welded steel construction. Stainless steel, aluminum, or other non-corrosive materials are also available.

the Overbeke-Kain company 1849-OK

Write today for Bulletin 784 for complete information.

20979 Aurora Rd. • Bedford, Ohio

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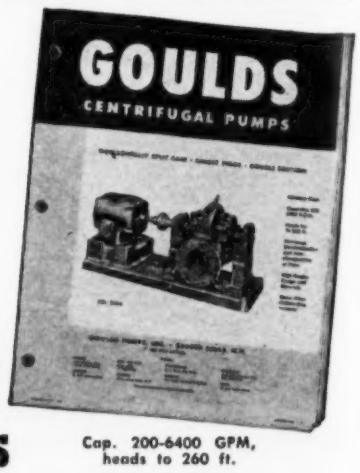
12 pages of facts about a NEW LINE of 19 pumps



Cap. 200-6400 GPM, heads to 260 ft.

Here's good news for pump buyers. The new Goulds Bulletin No. 721.6 gives you a host of information on the *extra* design features that are *standard* on Goulds new Fig. 3405 pumps.

Included are stuffing box bushings, steel-impeller keys, Teflon water seal rings — to mention a few.

This pump construction requires only three shaft and rotating parts assemblies (exclusive of wearing rings and impellers) to provide for 19 pump sizes.

But, get all the facts on how you can save on down time, maintenance costs and spare parts inventories. Write for Bulletin 721.6 today.

Goulds PUMPS INC. Seneca Falls New York

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BOSTITCH T5 TACKER

One in the hand is worth two men with hammers and tacks!

- Just about twice as fast—that's how manufacturers and contractors compare the Bostitch T5 Tacker to hammer and tacks.
- There are other big advantages. The T5 Tacker permits accurate locating of staples, even in tight spots. Drives staples to within 1/16" of corners, penetrates deep into hard or gummy woods. One-hand operation leaves other hand free for holding or aligning material. Equally important, workers like it.

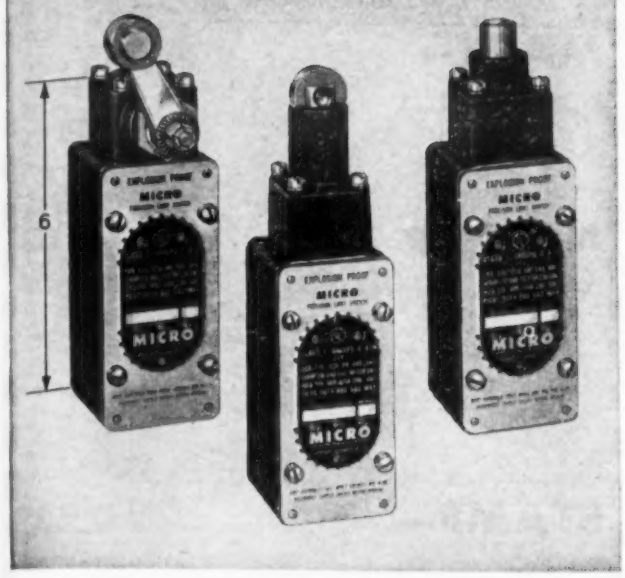
Fasten it better and faster with

For more information about the Bostitch T5 Tacker and for application details, write BOSTITCH, 683 Mechanic St., Westerly, R. I.

BOSTITCH®
STAPLERS AND STAPLES

▲ For more details circle **NED-718 C4** on enclosed inquiry slip ▲

MICRO Precision Switches



Here's the newest, smallest heavy duty explosion-proof limit switch

Plant operating men who need a precision, heavy-duty limit switch for use in explosive atmospheres will find these new MICRO "ML-E" explosion-proof switches ideal.

Small . . . enclosures are but 6" high . . . they are Underwriters' listed for hazardous atmospheres, Class 1, Groups C and D. Three different types of actuators, easily adjustable make them readily adaptable to all types of machinery and industrial equipment.

These explosion-proof switches are typical of a wide variety of MICRO precision switches for plant use. MICRO switches are available in a wide variety of sizes, shapes, weights, actuators, housings and electrical actuators. Their use as limits, safeties and interlocks makes plant equipment safer, more automatic and more productive.

A full line of MICRO switches which have proved valuable in plant installations is carried by 177 authorized MICRO SWITCH distributors in 155 key cities. Look under "Switches, Electric" in your phone book.

MICRO SWITCH
A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY
FREEPORT, ILLINOIS

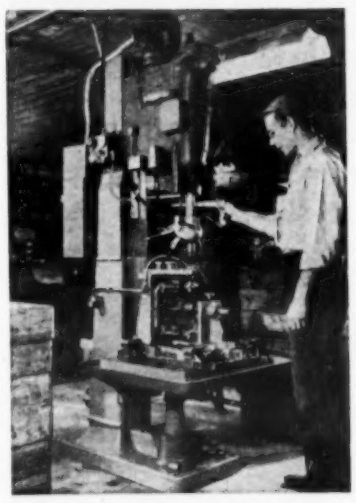
▲ For more details circle **NED-719 C4** on enclosed inquiry slip ▲

SPACER ASSEMBLY for sandwich type fastenings

Spacer assembly for sandwich type structure fastening incorporates a tapped sleeve which receives the attaching bolt and eliminates the need for a nut. This results in weight and assembly time savings. In addition, design readily lends itself to use with fragile constructions where take-up distance must be positively limited to prevent crushing. Fasco spacers are for light load applications, and are available with a variety of thread numbers and sizes in grip lengths from 3/8 to 1¼-in. They are fabricated from anodized aluminum alloy and can be installed without special tools. Made by **Delron Co.**, Fasco Div., 5226 Southern Ave., South Gate, Calif.

▲ For more details circle **NED-720 C4** on enclosed inquiry slip ▲

TURRET DRILL PRESS gives six drilling stations



Turret drilling machine is of conventional size but allows one operator to perform up to six different drilling operations including tapping at a single location in sequence. Six-spindle turret with locking-pin drive and mating-taper automatic spindle alignment is mounted on a single quill. Spindle speed, variable between 200 and 4000 rpm, depth control, accurate to within 0.002-in., and automatic reversal for tapping can be individually preset for each spindle. Head and work table adjust to allow any clearance up to 30 in., and throat clearance is 14¼ in. Turret can be indexed in either direction to any desired station. Capacity in steel is ½-in. Made by **Howe & Fant, Inc.**, 27 Fitch St., South Norwalk, Conn.

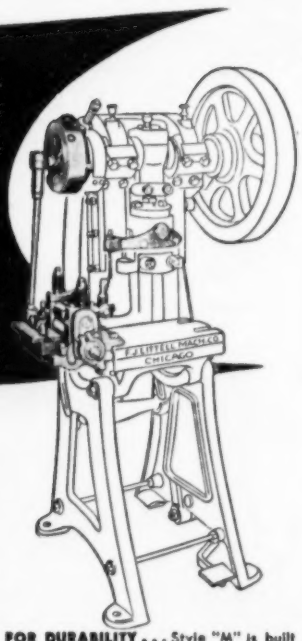
▲ For more details circle **NED-721 C4** on enclosed inquiry slip ▲

Toilet Compartments, Shower Units

Mills Metal Compartment Co. — Toilet compartments, shower and dressing rooms, shower units and hospital cubicles are among types of compartments described and specified in 20-page catalog 54-T. Feature is color chart showing samples of 20 new standard colors available in porcelain and baked-on enamel, in addition to black and white.

▲ For more details circle **NED-722 C4** on enclosed inquiry slip ▲

FOR LOW COST AND BIG RESULTS
Feed Your Presses With
LITTELL
STYLE "M" AUTOMATIC
ROLL FEED



FOR SPEED . . . With Style "M" automatic feeding your press can easily produce 9,000 stampings an hour at 200 strokes per minute, or 4,600 stampings an hour at 100 strokes per minute.

FOR VERSATILITY . . . Style "M" feeds left to right, right to left and front to back. Feed direction can be reversed by simply reversing clutch. Feed lengths per stroke are 0 to 4⅜" with standard gears and 0 to 8½" with compound gears.

FOR ADAPTABILITY . . . Style "M" is adaptable to any standard punch press. It feeds coil stock up to 8" wide and up to .055" thick (17 gauge).

FOR SAFETY . . . Style "M" automatic feeding keeps hands and fingers away from danger, prevents costly accidents.

FOR DURABILITY . . . Style "M" is built with hardened and ground feeding rolls and the other quality features that have made Littell Roll Feeds accurate and durable since 1918.

FOR ECONOMY . . . Style "M" brings you a big saving in price. It gives your presses the lowest insurance rate. It cuts your cost per stamping by multiplying press output.

WRITE FOR CATALOG

F. J. LITTELL MACHINE CO.
Speed with Safety
ROLL FEEDS • DIAL FEEDS
STRAIGHTENING MACHINES
REELS • AIR BLAST VALVES
District Offices: Detroit, Cleveland
4169 N. RAVENSWOOD AVE., CHICAGO 13, ILL.

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WANT A TABLE GUMMER GLUE THAT REALLY WORKS?

Paisley research has developed three *brand new* Table Gummer Glues..

1. TABLE GUMMER *BOTTLE LABEL* GLUE
2. TABLE GUMMER *TIN CONTAINER* GLUE
3. TABLE GUMMER *SHIPPING LABEL* GLUE

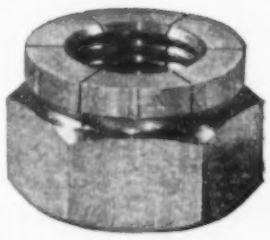
Each of these fine new adhesives possesses distinctive characteristics. Each one is specially designed for the job it has to do. No *one* all-purpose Table Gummer Glue can work with the same speed and efficiency on tin, glass, paper and other packaging materials. Now, with the right kind of PAISLEY Table Gummer Glue, labeling operations of this type can be performed with greater speed and efficiency. Labels *stay put* . . no shifting or falling off. Loose, torn edges, and spotty gumming are eliminated. Order a trial shipment TODAY, or send for free Adhesive Operation Data Sheet.

Paisley SCIENTIFIC ADHESIVE SERVICE

PAISLEY PRODUCTS INCORPORATED
Manufacturers of Glues, Pastes, Resin Adhesives, Cements and Related Chemical Products
1770 CANALPORT AVE., CHICAGO 16, ILL. ★ 630 W. 51st STREET, NEW YORK 19, N. Y.

▲ For more details circle **NED-724 C4** on enclosed inquiry slip ▲

one standard FLEXLOC SELF-LOCKING NUT



covers temperature range to 550°F

Because they are all metal and require no auxiliary locking device, FLEXLOCS lock and stay tight even at higher temperatures. See your local industrial distributor for literature and samples or write STANDARD PRESSED STEEL Co., Jenkintown 24, Pa.

FLEXLOC LOCKNUT DIVISION **SPS**
JENKINTOWN PENNSYLVANIA

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Before You Buy New or Replacement WHEELS SEE *Buffalo*

You can select from all types of wheels, in a complete range of sizes, to get the right wheel for the job. Designed and built to stand up under faster modern speeds and greater hauling distances. Before you buy any wheels, be sure to compare the selection and values offered by BUFFALO.

BUFFALO CASTER & WHEEL CORP.
1032 Broadway, Hamilton, Illinois

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Buffalo Caster & Wheel Corp., Dept. 15
1032 Broadway, Hamilton, Illinois
Without obligation please send me complete information about Buffalo Caster and Wheels.

NAME _____
FIRM _____
ADDRESS _____
CITY _____ STATE _____

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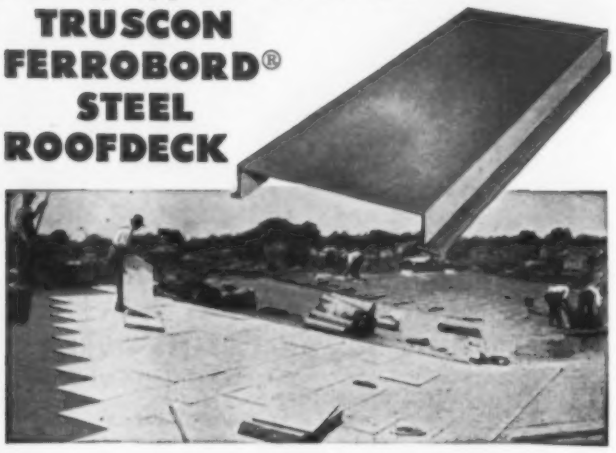
For Quick, Permanent Roofing
on any type of structure

TRUSCON FERROBORD® STEEL ROOFDECK



This strong, lightweight, steel roofdeck can be applied to any flat, pitched or curved roof structure. Large areas can be covered quickly. The members are so designed and formed that each unit firmly interlocks with the adjoining unit along the full length, achieving the maximum in lateral distribution of concentrated loadings. The members are fabricated in units long enough to span over three or more purlin spacings.

Ferrobord is manufactured from both 20-gage and 18-gage copper-bearing strip steel. Each unit is 6 inches wide and has a depth of either 1½" or 1¾". WRITE FOR FREE BOOKLET!

TRUSCON MARK OF MERIT PRODUCTS

TRUSCON STEEL DIVISION
REPUBLIC STEEL
1096 ALBERT STREET • YOUNGSTOWN 1, OHIO
Export Dept.: Chrysler Bldg., New York 17, N.Y.

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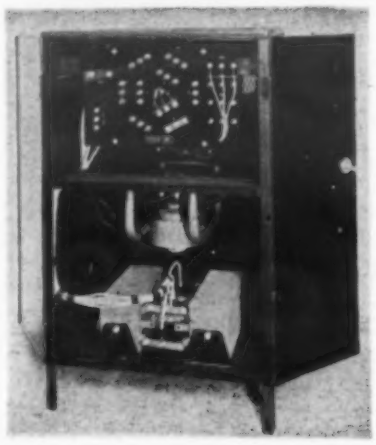
SELENIUM RECTIFIER
limits short circuit current

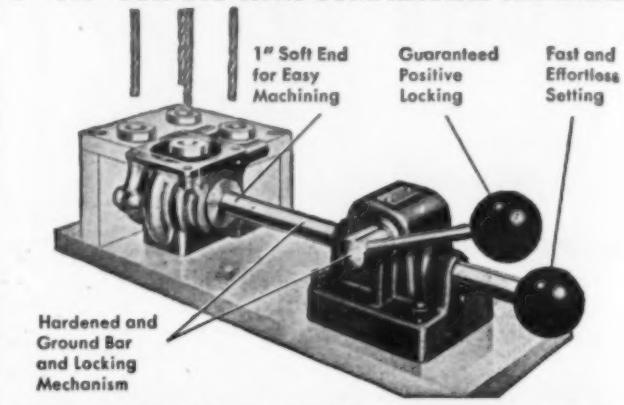


Where a direct-current power source with low ripple, reliability under severe overloads and safe short-circuit characteristics is imperative, this Robin-Arc X-100 three-phase selenium rectifier is practical. Unit delivers continuously 100 amp at 62 v from inputs of 185-250 v three-phase 50/60 cycle and is adjustable from 36 up to 62 v in small increments. Correct use of rectifier behavior and built-in reactances in iron-core components limit short-circuit current to safe value. Unit will also limit temperature rise of rectifier cells to 20° C below recommended standards. Units up to 180 amp at 80 v with identical characteristics are now standard and special units can be supplied. Made by **J. E. Robin, Inc.**, 265 Rhode Island Ave., East Orange, N. J.

▲ For more details circle NED-729 C4 on enclosed inquiry slip ▲

HEINRICH "GRIP-MASTER" FIXTURE-LOCK
NOW AVAILABLE IN TWO TYPES

- "SV" STANDARD
- "PA" FOR USE WITH COMPRESSIBLE MATERIALS



CUT TOOLING COST—SPEED WORK

Standard "SV" Model features the famous instant-acting, effortless locking mechanism used successfully in industry for nearly 10 years in drilling, milling operations. Now a special "PA" Model permits pumping jaw forward for holding *compressible materials* with a positive grip that hammer blows cannot break! Pays for itself in cutting tooling costs up to 75%! See your Dealer or write for details.

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SEE US AT THE ASTE SHOW
Philadelphia, April 26-30
BOOTH No. 1646
or write for FREE Catalog!

DEPT. 304-C • RACINE, WIS.
DRILL PRESS VISES • FIXTURE LOCKS • NIBBLERS
PUNCHES • ROD CUTTERS

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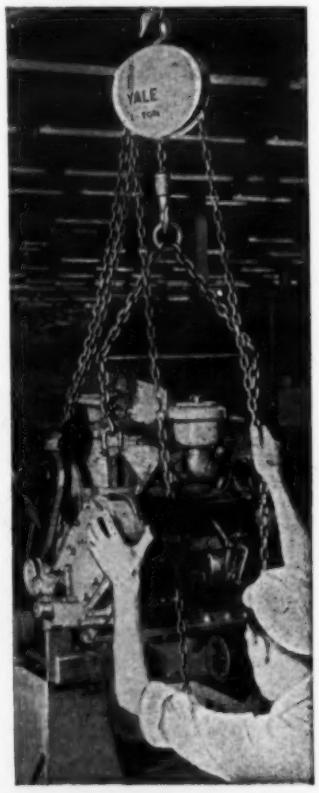
Lifts more...lasts longer...
costs less to service and maintain

THE YALE LOAD KING HAND HOIST IS TRULY THE FINEST OF ITS TYPE

QUICK FACTS ABOUT THE LOAD KING HAND HOIST



- Capacities ½ to 2 tons
- Lightweight...easily portable
- Quality aluminum alloy castings & alloy steels throughout
- Fast...lifts 4000 lbs. 2.1 ft. in 60 seconds
- One-piece housing protects all operating parts
- Precision ball bearings on all rotating shafts
- Exclusive Synchro-Matic Load Brake automatically keeps load suspended between pulls
- Fractureproof steel Safety Hooks...top and bottom

YALE*
INDUSTRIAL
TRUCKS AND HOISTS
*Reg. U. S. Pat. Off.

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Please send me my FREE copy of the *Yale Hoist Users and Buyers Guide.*

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Name_____ Title_____
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In Canada write: The Yale & Towne Manufacturing Company St. Catharines, Ontario, Canada

Gas, Electric, Diesel and LP-Gas Industrial Trucks • Worksavers Hand Trucks • Hand and Electric Hoists • Pul-Lifts

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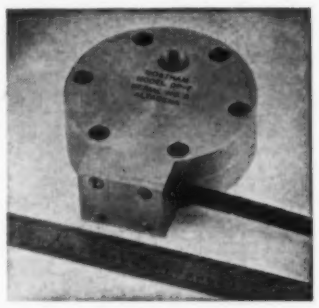
SENSITIVE PRESSURE TRANSDUCER
selects working ranges from ±0.5 to 15 psi differential at 100 psi line



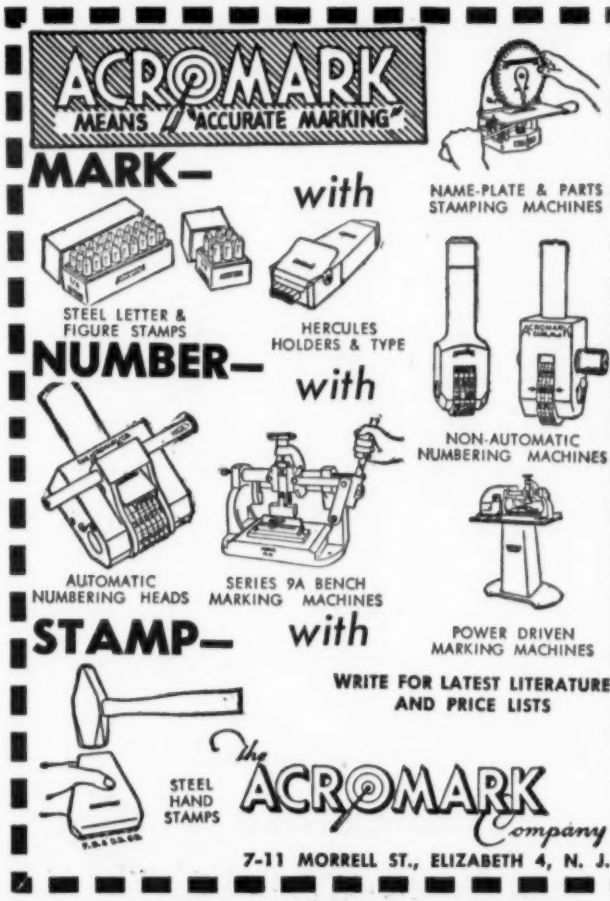
Measurement of differential pressure in terms of electrical output is function of model DP-7 sensitive pressure transducer whose range of working fluids encompasses all noncorrosive gases and liquids. Design allows selection of working ranges from ±0.5 to 15 psi differential at line pressures up to 100 psi. Applications include laboratory testing, radio telemetering and process control where precise measurement of low differential pressure is required, both statically and dynamically. Natural frequency corresponding to range of ±1 psi is 1000 cps.

Output is derived from two inductances which vary 10 per cent in opposite directions with application of full pressure. Instrument will operate in alternating current carrier systems from 60 to above 10,000 cps with accuracy within 1 per cent of full scale. When operated in bridge circuit at 3 kc, full scale output is ±50 mv per volt and maximum excitation is 50 v. Made by **North American Instruments, Inc.**, 2420 Lake Ave. N., Altadena, Calif.

▲ For more details circle NED-730 C4 on enclosed inquiry slip ▲

ACROMARK MEANS "ACCURATE MARKING"

MARK— with



WRITE FOR LATEST LITERATURE AND PRICE LISTS

The ACROMARK Company
7-11 MORRELL ST., ELIZABETH 4, N. J.

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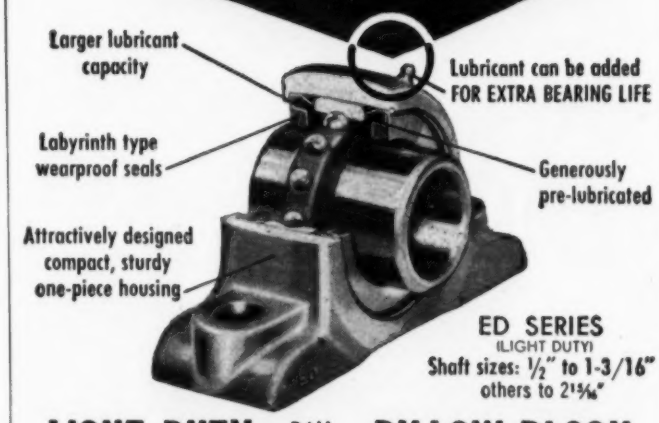
An Ahlberg plus feature in
LOW COST BEARINGS



ED SERIES
(LIGHT DUTY)
Shaft sizes: ½" to 1-3/16"
others to 2 15/16"

LIGHT DUTY BALL BEARING PILLOW BLOCK

For those jobs where cost is the primary factor, it will pay you to investigate the light duty, low cost ball bearing unit. Let us send you bulletin 7149A.

AHLBERG BEARING CO. 3025 W. 47th Street Chicago 32, Ill.

AHLBERG
PRECISION BUILT BALL BEARINGS SINCE 1908

▲ For more details circle NED-731 C4 on enclosed inquiry slip ▲

OSTER presents the new 75 lb. "Featherweight Champ"

The all new Oster "Featherweight Champ", a Power Drive for Hand Pipe Tools, has just weighed in at 75 lbs. One man can move it and use it with ease...yet the "Featherweight Champ" is exceptionally sturdy and powerful. Ideal for "on the spot" threading, its range is ⅛" to 2", and it is available with either electric or gasoline power.

For the full story on the "Featherweight Champ" see your local Oster Distributor.

THE OSTER MANUFACTURING CO.
Main Office and Factory:
2066 East 61st St. • Cleveland 3, Ohio

Builders of Cost Reducing Threading Equipment Since 1893

▲ For more details circle NED-734 C4 on enclosed inquiry slip ▲

Cut Maintenance Costs with CARBOLOY MASONRY DRILLS

Anchoring machinery

Stringing electrical conduits

Installing plumbing

Get fast, clean, deep holes, at *any* angle, in concrete, asphalt, tile, brick, slate, marble, etc.

Carboloy Masonry Drills won't pack or stall. Rotary-drill *any* masonry continuously to any depth. Superhard Carboloy cemented carbide cutting tips assure long drill life. Available separately, or in job-designed kits. Sizes 3/16" through 1½".

For complete information contact your distributor or write—

CARBOLOY
DEPARTMENT OF GENERAL ELECTRIC COMPANY
11179 E. 8 Mile Road, Detroit 32, Michigan

"Carboloy" is the registered trademark for the products of Carboloy Department of General Electric Company.

▲ For more details circle NED-735 C4 on enclosed inquiry slip ▲

A BETTER TIE AT LOWER COST

U·S·S GERRARD ROUND STRAPPING is:

FLEXIBLE—Gerrard Round Steel Strapping is easier to apply because it is "flexible" to use and it conforms and clings snugly to your package, whether it's a carton . . . crate . . . bundle, palletized . . . unitized . . . or for carload reinforcement.

DEFTLY APPLIED—Gerrard Round Steel Strapping may be applied with both the hand-operated and semi-automatic machines—quickly, efficiently.

COSTS LESS—Gerrard Round Strapping costs about 40% less than any other metal reinforcement.

• Heavy duty U·S·S Gerrard Flat Strapping is also available for palletizing, unitizing, and carload reinforcement applications. The Gerrard stretchers and sealers are simply constructed, easy to operate. Form a tight, non-slip seal.

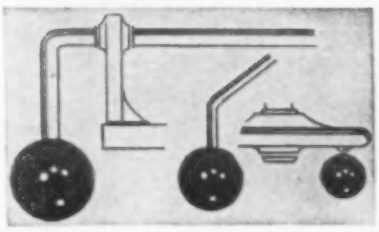
CONTACT A GERRARD ENGINEER. He will be happy to assist you in solving your packaging-tying problems—in both efficiency and economy, if possible. His advice is free—our service to you. Write for further information.

GERRARD STEEL STRAPPING DIVISION, UNITED STATES STEEL CORPORATION
4717 South Richmond Street, Chicago 32, Illinois

U·S·S GERRARD
Round Steel **STRAPPING** *Flat Steel*
UNITED STATES STEEL

▲ For more details circle NED-736 C4 on enclosed inquiry slip ▲

PLASTIC KNOBS
measure 1, 1⅝ and 2-in. OD



Plastic ball lever knobs are available measuring 1, 1⅝ and 2-in. OD. The 2-in. size is available with a ½ or ⅝-in. tapped steel insert, the 1⅝-in. size has a tapped ⅜-in. brass insert and the 1-in. size a ¼-in. tapped hole. Used as knobs on clutches, gears and levers on machine tools, balls are good thermal insulators and provide insulation against electric shock. Chipping does not result in formation of sharp edges. Made by **Jergens Tool Specialty Co.,** Dept. NED, 712 E. 163rd St., Cleveland 10, O.

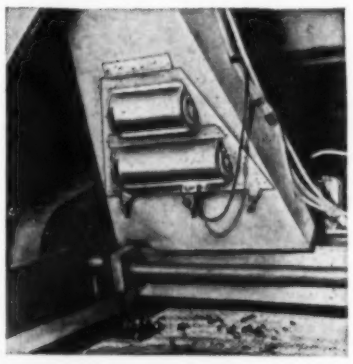
▲ For more details circle NED-737 C4 on enclosed inquiry slip ▲

ROTARY HAND VALVE
four-way hydraulic or air type

Designed for 200 psi air, oil, or water operation, MAC 4-way rotary hand valve has a one-piece bonded rotor and an aluminum body. Rotor design is self-sealing and self-lubricating, and provides a definite "feel" at neutral position, eliminating the necessity for detents. Handle can be assembled in any one of four different positions for alternate circuit applications. Valve is 3 in. square and weighs 20 oz. Made by **Mechanical Air Controls, Inc.,** 10030-A Capital Ave., Detroit 37, Mich.

▲ For more details circle NED-738 C4 on enclosed inquiry slip ▲

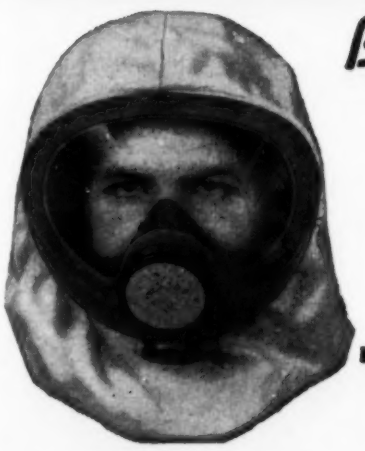
OVERLOAD ALARM SYSTEM
for magnetic separators



Automatic alarm system is arranged to sound a bell or activate any other standard type alarm when magnetic separators fall below peak operating efficiency as a result of excessive build-up of separated tramp iron and ferrous wastes. The quantity of tramp iron is continuously measured as it accumulates on the magnet surface, circuit being automatically powered when a predetermined accumulation is reached. Maintenance men are alerted when equipment needs cleaning. Made by **Eriez Mfg. Co.,** Dept. MB 9, Erie, Pa.

▲ For more details circle NED-739 C4 on enclosed inquiry slip ▲

SAFETY EQUIPMENT FOR ALL INDUSTRIES



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DUST AND SPRAY HOOD

WEIGHS ONLY 9 OUNCES
Patent No. 2537265

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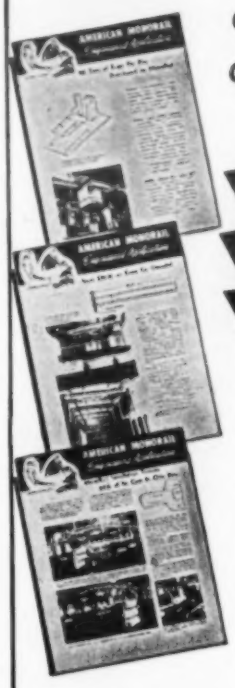
Write for Bulletin No. 42

IPCO *Safety Equipment for all Industries*
INDUSTRIAL PRODUCTS COMPANY
2807 N. Fourth Street • Philadelphia 33, Pa.

▲ For more details circle NED-740 C4 on enclosed inquiry slip ▲



every study shows a Handling Saving

80 TONS OF SUGAR PER DAY
SAVES $30 ON EVERY CAR UNLOADED
RETURNS 84% OF ITS COST

Many companies are checking their handling problems against the American MonoRail Case Study File of "Engineered Applications." The file contains a series of case studies taken from many successful American MonoRail installations.

If you want to lower your handling costs, speed up production and cut maintenance overhead, let us send you this file. Just drop us a line on your business letterhead, asking for "Engineered Applications File F-1."

AMERICAN MONORAIL COMPANY
OVERHEAD HANDLING EQUIPMENT
13116 ATHENS AVENUE • CLEVELAND 7, OHIO

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Plate Mounted Wheels ... *save money* in Carbide Tool Grinding

Less costly than diamond wheels! Especially efficient for roughing, semi-finishing and, frequently, finishing, too! Made to high standards of accuracy. Grind fast and cool. Made to fit all leading makes of grinders. Prompt delivery from stock. Write for bulletin ESA-181.

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PHILADELPHIA 37, PA.
Div. of Simonds Saw and Steel Co.
DISTRIBUTORS IN PRINCIPAL CITIES
BRANCH WAREHOUSES: Boston, Detroit, Chicago, Portland, San Francisco

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HOW TO INSURE TOP METALWORKING PERFORMANCE

for only **$1.00**

Send for a trial order of

CMD ANTI-SCORING LUBRICANTS

For top performance on lathe centers, grinding, press fit, stamping, die posts and many other operations—CMD ANTI-SCORING Lubricant can't be beat. It makes your operations smoother, faster, easier and of course more profitable. Prevents scoring, seizing, galling...all bugaboos in modern machining work. This trial order will start *you* on *your* way to top performance where a high pressure lubricant is needed. You will be surprised to find how long it lasts. Get yours today in both oil and grease consistencies.

TRIAL ORDER—TWO FOUR OZ. TUBES $1.00

Send me my order of CMD Lubricants right away! { Bill me / Bill my company }
Name _____
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Chicago Manufacturing and Distributing Company
1902 West 46th St., Chicago 9, Illinois

CHICAGO MANUFACTURING & DISTRIBUTING CO.

▲ For more details circle NED-743 C4 on enclosed inquiry slip ▲

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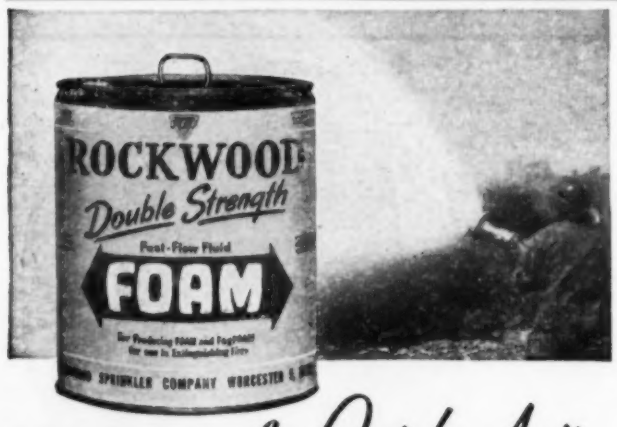
Union Gear & Sprocket Corp. 114-120 Purchase St. Boston, Mass.

For more details circle NED-744 C4 on enclosed inquiry slip



USE LESS... for Quicker Action

Rockwood's Double Strength FOAM Liquid is faster spreading, more fluid and flows freely at sub-zero temperatures. It covers burning surfaces faster, seals off combustible vapors and flows freely around obstruction. Three parts of FOAM mixed with 97 of water form an excellent foam blanket that quickly re-seals if broken.

FOAM saves in many important ways. Saves cost of use, because *only 3%* of it forms your extinguishing agent. Saves storage space and shipping costs because it's concentrated. Saves vital time by its speedy, thorough action.

Write for *"Fire Fighting Products,"* Rockwood's illustrated catalog. Distributors in all principal cities.

ROCKWOOD SPRINKLER COMPANY

Engineers Water . . . to Cut Fire Losses

44 HARLOW STREET, WORCESTER, MASS.

For more details circle NED-745 C4 on enclosed inquiry slip

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If you have requirements for pressure, temperature, flow, level or electrical measuring instruments, for the products you make or for manufacturing operations, it will pay you to consult with U.S. Gauge, the world's largest manufacturer of accurate instruments.

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Name _____ Title _____
Company _____
Address _____ City _____ State _____

For more details circle NED-746 C4 on enclosed inquiry slip

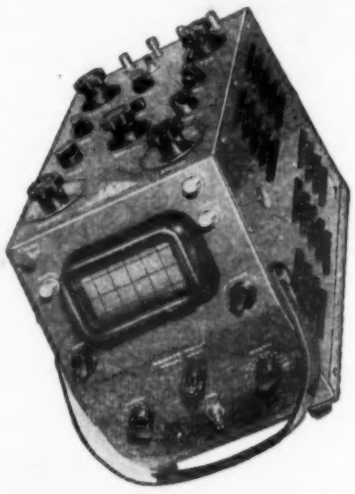
PUSH BROOM
has Bakelite styrene fibers

Durable push broom has long-lasting fibers made from Bakelite styrene monofilament that do not mat and can be dipped clean in warm suds. The filaments are resilient and strong, and resist water, oils and greases. Fibers are flared out from the ends of the broom to facilitate cleaning out difficult corners and for getting in close to walls and equipment. Broom block is of lacquered honey maple. Long-lasting fibers cause minimum drag, making the broom easy to push. Made by **Empire Brushes, Inc.,** Dept. N, Port Chester, N. Y.

For more details circle NED-747 C4 on enclosed inquiry slip

PORTABLE OSCILLOSCOPE
instant, direct-reading calibration

Instantaneous direct-reading direct-current calibration of either positive or negative going signals is featured by the Pulsescope oscilloscope. Vertical amplifier sensitivity of 0.2 v rms/inch; response from direct current to 5 mc within 3 db or pulse rise of 1 mu s; and internal intensity modulated markers of 1, 10, 100 or 1000 mu s give this instrument high versatility. Repetitive or trigger sweep is variable from 5 cycles to 500 kc with 5 X sweep expansion. Sweep, marker and dc calibrating voltage are available externally. Instrument operates from 50 to 400 cycles at 115 v ac., measures 8½ x 6¾ x 13¾ in. and weighs 22 lb. Made by **Waterman Products Co.,** 2445 Emerald St., Philadelphia 25, Pa.



For more details circle NED-748 C4 on enclosed inquiry slip

Nonferrous Alloy Castings

Shenango-Penn Mold Co.—Comprehensive specification bulletin 154 features detailed alloy chart showing comparative specifications, chemical analyses and physical properties of nonferrous alloys. Centrifugal castings range from small machine parts to largest rolls and marine bushings and are made in tin, bronze, aluminum and manganese bronzes, brass, silicon bronzes, special alloys and Monel metals.

For more details circle NED-749 C4 on enclosed inquiry slip

JOHNSON BAND SAWS

SPECIFICATIONS—MODEL B

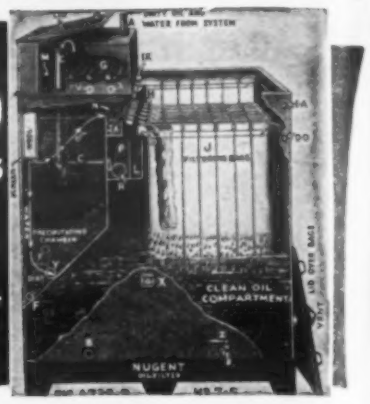
Capacity—5" rounds, 10" flats.
Height Overall—(Closed)—32".
Blade Length—7'5" x ½" x 23 ga.
Floor Space—46" x 28".
Weight—(Uncrated) 235 lbs. Crated 280 lbs. Boxed for Export 400 lbs.
Wheel Diameters—10"
Motor—⅓ H.P. any voltage available.
Speeds—45, 90 and 150 ft. per min.
Casters—Optional at slight extra cost.

MODEL J, 10" X 18" CAPACITY ALSO AVAILABLE
WRITE FOR DETAILS

JOHNSON MANUFACTURING CORP.
ALBION, MICHIGAN

For more details circle NED-750 C4 on enclosed inquiry slip

98% SAVINGS in Lube Oil with NUGENT GRAVITY FILTERS



NUGENT GRAVITY FILTERS are widely used to supply continuously clean oil in turbine lubrication systems. They filter out dirt, carbon, water and harmful impurities without changing the original characteristics of the oil. They are built in standard capacities from 20 to 2,000 GPH. The only moving element is the oil itself, thus the greatest economy is effected—no power cost—no breakdowns or costly maintenance. Cleaning time averages five minutes per bag.

Write for bulletin

NUGENT TRADE MARK Est. 1897

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421 N. Hermitage Ave. CHICAGO 22, ILLINOIS

Oil Filters, Oiling and Filtering Systems, Telescopic Oilers, Oiling Devices, Sight Feed Valves, Flow Indicators . . . *Representatives in Principal Cities*

For more details circle NED-751 C4 on enclosed inquiry slip

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AT BELL AIRCRAFT CORPORATION

SPEEDS PAPERWORK

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CUTS DUPLICATING COSTS 33⅓%

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• THE BELL X-IA is the world's fastest airplane. Xerography is the world's fastest, most versatile way to copy original material on to paper masters for offset duplicating.

Bell Aircraft Corporation cuts duplicating costs 33⅓% and speeds production of a vast variety of paperwork by using paper masters prepared by xerography.

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THE HALOID COMPANY
54-59X HALOID STREET • ROCHESTER 3, N. Y.

CANADA: The Haloid Company of Canada, Ltd., 728 Bay St., Toronto 2, Ont.

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XEROX

For more details circle NED-752 C4 on enclosed inquiry slip

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Experience has proven that you can depend on DICO WHEELS for long lasting, trouble-free service.

Sizes from 6" to 24.5" rubber tire diameters.

Drop Center and Demountable Rim Pneumatics.

Demountable Cushions and Solids—and "Molded-on" types.

DICO DES MOINES 5, IOWA

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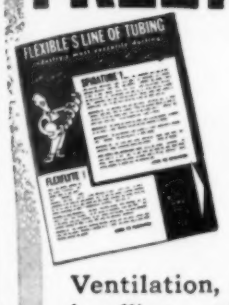
FREE! Every Maintenance Engineer should have this booklet



Illustrated booklet that deals with your problems . . . how they can be solved quickly and efficiently with this amazing flexible ducting. Ventilation, dust removal, materials handling . . . whatever your requirements, FLEXIBLE's line of tubing will meet them better, cost less. And most important, YOU CAN INSTALL FLEXIBLE'S LINE OF TUBING YOURSELF!

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Guilford, Connecticut Pasadena 1, California

For all ducting systems: FLEXFLYTE® SPIRATUBE® AYRTUBE ®

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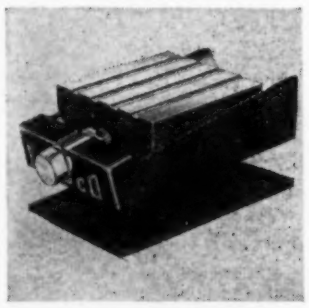
PERIODIC LEVELING IMPORTANT TO PEAK MACHINE EFFICIENCY!

Machine tool manufacturers emphasize the importance of not only setting machines level, but keeping them that way. It's a must where accurate work tolerances are involved, or, if you're trying to keep down machine maintenance costs.

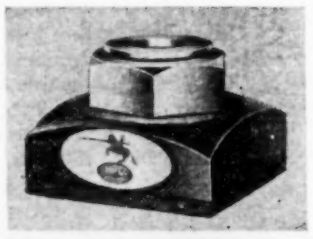
With EMPCO JACKS, setting machines level and keeping them that way is as simple as turning a screw . . . for that's all you do! Apply a wrench to the "hex" screw head and turn right or left until your level indicator reads "zero."

To reduce vibration, VI-SORB mounting pads are optional with each style EMPCO JACK. Mounting pads not only lessen the vibrations generated within the machine itself but also isolate it from the effects of vibrations in the building.

Each style EMPCO Leveling Jack is made in three sizes for light to heavy equipment and each size is available in many models suitable for various installations.



Style JD Wedge type



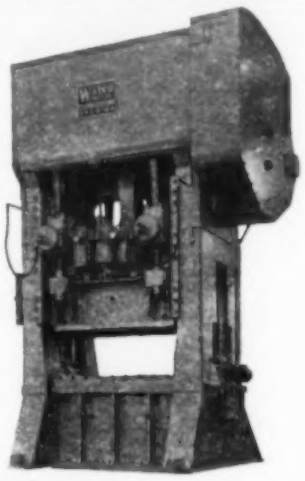
Style JS Screw type

For complete specifications and prices, write the Enterprise Machine Parts Corporation, 2727 Jerome Ave., Detroit 12, Michigan.

▲ For more details circle NED-755 C4 on enclosed inquiry slip ▲

FORCE ADJUSTMENT DEVICE for presses acts as safety overload

When applied to a double-action press, the Warco hydro-pneumatic force adjustment device acts as safety overload protection for the blankholder and provides a means for adjusting blankholder pressure independently at all four corners. Pressure up to the device's capacity can be applied at any corner. With this unit it is possible to determine pressure required at each corner and to duplicate this setting easily whenever the job is re-run. Device will detect double blanks and stop the press before damage to press and dies occurs. Made by **Federal Machine & Welder Co.**, 212 Dana St., Warren, O.



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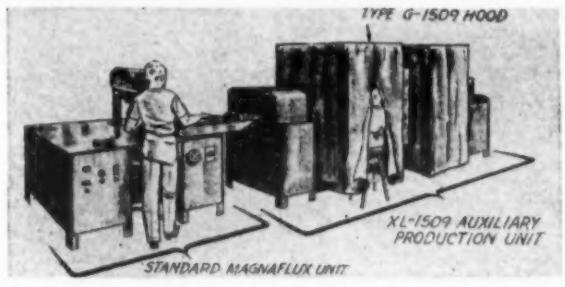
PRODUCTION INSPECTION SYSTEM for Magnaflux unit, is conveyorized

Means for achieving production rates of inspection by utilizing existing Magnaflux unit is provided by conveyorized auxiliary production unit which works



for small to medum sized parts. Operator of standard Magnaflux unit magnetizes part and places it on conveyor of auxiliary production unit which carries part through bath application station to inspectors who remove unacceptable parts. Acceptable parts are then carried through demagnetizing process to end of inspection cycle. Each of three available auxiliary units offers slightly different combination of features. Made by **Magnaflux Corp.**, 7316 W. Lawrence Ave., Chicago 31, Ill.

▲ For more details circle NED-757 C4 on enclosed inquiry slip ▲

Precision Equipment

Challange Machinery Co. — Surface plates, floor plates, surface plate equipment, work benches and other time-saving devices for layout, inspection, assembly and general production are among items illustrated and described in 20-page catalog 838. Equipment ranges from "vest-pocket" size to huge surface plates and giant castings.

▲ For more details circle NED-758 C4 on enclosed inquiry slip ▲

CUSTOM COMPOUNDING

Take advantage of the long, varied experience of our compounders. Use their "know-how" to get the most out of rubber or elastomeric plastics. Our complete laboratories are at your disposal in solving your problems.

CUSTOM MOLDING

Our modern plant is long on experienced personnel and short on overhead costs. We specialize in the "hard to mold" rubber to metal items, light colors, and short production runs. Precision molding is our keynote.

Submit your problem or specification, today.

303C

COLONIAL RUBBER CO. RAVENNA, OHIO

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DENISON HydrOILic Equipment

Denison offers one of the most extensive lines of hydraulic pumps, fluid motors, and pressure and directional controls now available for high-pressure systems ranging to 5000 psi. In all kinds of applications requiring smooth, efficient hydraulic *power, pressure, or motion* with accurate control, Denison HydrOILic components have proved they stand up longer and cost less, under hard, continuous operation. Write for Denison catalogs on any hydraulic equipment you need.

DENISON HydrOILics — PUMPS | MOTORS | CONTROLS | PRESSES

The DENISON Engineering Co.
1150 Dublin Rd., Columbus 16, O.

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performance data prove Norgren Automatic-Drain Filter's

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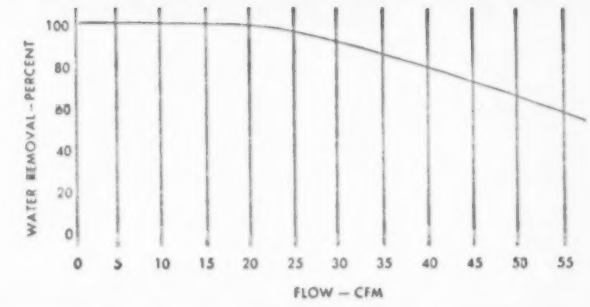
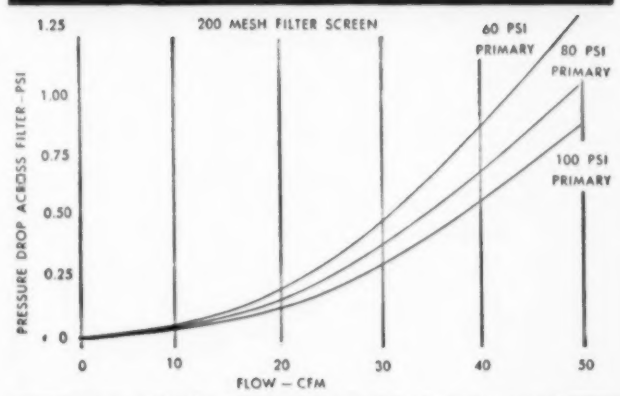
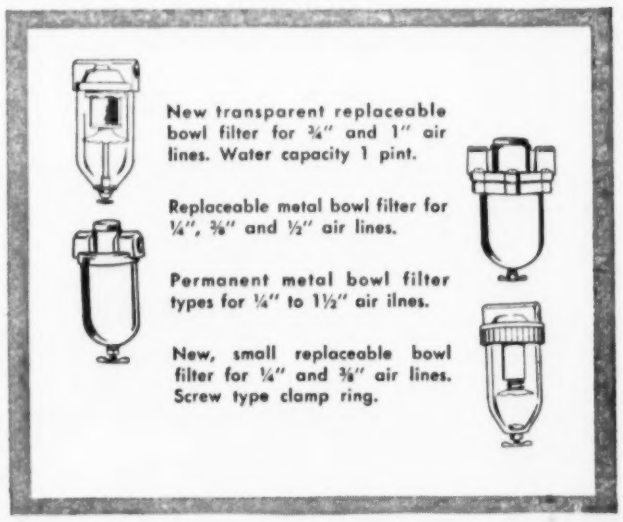


LOW PRESSURE DROP





PIONEER AND LEADER IN OIL-FOG LUBRICATION FOR 26 YEARS

Valves • Filters • Regulators • Lubricators • Hose Assemblies

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C. A. Norgren CO.
3405 So. Elati, Englewood, Colo.

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WHEN SPACE IS LIMITED AND LOW COST IS DESIRED

...SPECIFY *UNITED ELECTRIC*

Type J7 is a compact, precision-built pressure-vacuum control used for controlling air, gas or liquid pressures. It is especially suitable for applications where limited space, weight, and low cost are important factors. Write for Bulletin #5-7.

Type J40 is an inexpensive, lightweight pressure control that is widely used on industrial equipment, aircraft and other engine applications. It is reliable and rugged—ideal for applications that do not require a closed head. Write for Bulletin #5-9.

Switch Ratings (both Types): 15 amps at 115 or 230 volts AC. DC or 20 amp AC switches available on request.

UNITED ELECTRIC CONTROLS COMPANY
81 School Street, Watertown, Mass.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES
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How a 'Sexauer' Easy-Tite faucet washer costing pennies can save you $115.22 a year!

A tiny, 1/32" faucet leak wastes 95,040 gallons—*$24.14* worth*—of water yearly.

Hot water leakage is even costlier... Fuel waste adds upward to *$91.08*** more to the loss. Total down the drain: *$115.22.*

And this is the dollar loss caused by only *one* pinpoint leak!

Fuel Waste		Water Waste	Total Waste
Oil (792 gals.)	**$91.08	$24.14	$115.22
Coal (9,879 lbs.)	88.91	24.14	113.05
Gas (84,411 cu. ft.)	84.81	24.14	108.95

*Water costs (figured at $1.90 for 1,000 cu. ft.) authenticated by Hackensack Water Co. **Fuel costs authenticated by American Gas Association.

Save money; cut costs; stop leaks with dependable 'Sexauer' Easy-Tite faucet washers.

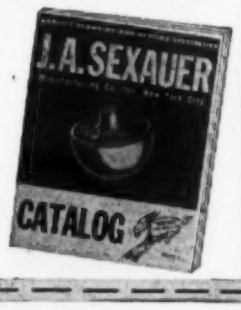
Built like a tire with Fiberglas reinforcement

Easy-Tite faucet washers are made of a special du Pont product, instead of rubber, and reinforced with Fiberglas. The result is a washer that resists the closing squeeze that splits and mushes ordinary washers. And Easy-Tites withstand destructive heat (up to 300° F. by test). These features explain why *'Sexauer' Easy-Tites outwear ordinary faucet washers 6 to 1!*

By avoiding labor on those 5 additional repairs, Easy-Tites cut today's high maintenance costs 83⅓%! But Easy-Tites not only save water, fuel, labor; they also prolong the life of expensive fixtures.

FREE CATALOG—Easy-Tite faucet washers are just part of the line of over 3000 'Sexauer' Triple-Wear plumbing repairs parts and patented precision tools.

Get complete information on Easy-Tites and other cost-cutting 'Sexauer' materials. Send for our FREE, new 118 page Catalog H. Fill in and mail the coupon today.



J. A. Sexauer Mfg. Co., Inc. Dept. AU-34
2503-05 Third Ave., New York 51, N. Y.

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My name.....Title.....
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Street.....
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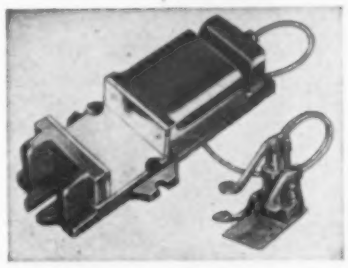
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS
▲ For more details circle NED-763 C4 on enclosed inquiry slip ▲

HYDRAULIC MACHINING VISE holds work with up to 5-ton grip



Mountable on machine or bench, hydraulic foot-controlled Milvise will hold work piece with pressure ranging from few pounds to 5 tons. Hydraulic pressure is obtained by foot-operator equipped with applicator pedal which moves rear jaw forward to grip work. Another pedal applies pressure to maximum and the third breaks pressure to allow jaw to move back automatically. Construction is of steel, and jaw plates are hardened and ground. Jaw faces are parallel to 0.001-in. accuracy. Cross slots and side ears are provided so that vise can be bolted either lengthwise or across work table. Jaws have 6-in. width and 3-in. throat depth. Made by **Studebaker Machine Co.,** 1144 S. Ninth Ave., Maywood, Ill.

▲ For more details circle NED-764 C4 on enclosed inquiry slip ▲

VACUUM FORMING MACHINE completely self-contained machine handles thermoplastic films, sheets

Completely self-contained, model HV-30-60 Hydro-Vacumatic unit is designed for high-speed vacuum forming of thermo-plastic films and sheets. Built-in components include air compressor, mold clamp frame assembly which is adjustable in all dimensions and hydraulic pump. Machine has 30 x 60-in. platen which accommodates plastic sheet 27 x 57 in. Molding and embossing under vacuum pressure can be done with sheet materials up to ¼-in. thick.

Chromalox strip heater has three banks that can be operated in any combination to provide temperature range up to 1150° F. Heating assembly can be adjusted up to 30½ in. above table. Its electrical requirements are 220 v, 60 cycles, three-phase, while single-phase controller assembly requires 110 v, 60 cycles. Hydraulic pump operates on 1-hp motor with 5 gpm capacity. Vacuum surge capacity is 150 gal.

Clamp travel allows for 18-in. maximum depth of draw. Controls include hydraulic gage, vacuum gage, solenoid valves wired with four delay timers, Microswitch assembly and a West pyrometer. Made by **Pamco Industries, Inc.,** Dept. 1-R, Ludlam Ave., Bayville, N. Y.

▲ For more details circle NED-765 C4 on enclosed inquiry slip ▲

Plastic Seal

BETTER THAN EVER

More transparent
Easier stripping
Lighter color!

Protects parts
FROM RUST AND DAMAGE
while handling or shipping!

Plastic Seal forms a skin tight coating that is moisture-proof and air-tight. Strongly resists shock and abrasion. Ideal for bulk shipments — requires less wrapping — reduces cost. Although Plastic Seal is tough it can be easily peeled. Transparency allows instant inspection and identification. Also available in colors for coding.

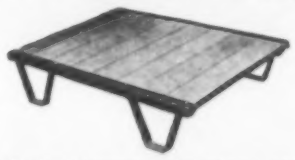
Write today for price information and free engineering service on production dipping problems.

GLOBE *Imperial Corporation*
2023 Kishwaukee St., Rockford, Illinois

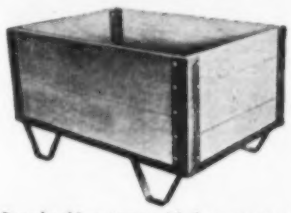
▲ For more details circle NED-766 C4 on enclosed inquiry slip ▲

In production or in storage

IRONBOUND EQUIPMENT HANDLES SMALL PARTS MORE EFFICIENTLY



Standard 2-way entry bolted type skid built to handle loads up to 5 tons.



Standard box top welded to standard skid. Available too, with removable boxes. Handles many items in production and storage.

Flexible arrangement of boxes and skids permits tiering and stacking to meet your individual requirements. Provides quick availability, easy handling, or storage for complete units or parts.

Each of the units illustrated has an important use in modern industry. Ironbound skid platforms and box tops are prime sources of increased plant capacity so vitally needed today. Our representative can help you to increase your output and plant space. Catalog GP-7 may help you, too!

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
55 HOFFMAN PLACE • HILLSIDE, N. J.

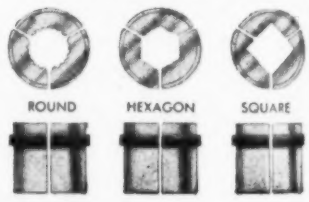
MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS
▲ For more details circle NED-767 C4 on enclosed inquiry slip ▲

HARDINGE ELMIRA, N.Y.

Style "S"

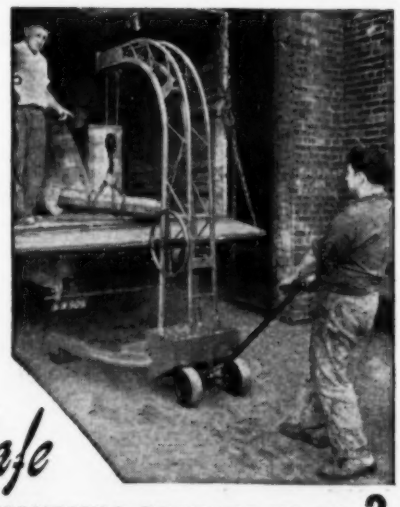
SURE-GRIP Master Collets and Pads

Pads are interchangeable among different machines with same capacity. Available for all sizes of the following machines up to and including 3½" capacity:



CLEVELAND
CONE
GREENLEE
GRIDLEY & ACME-GRIDLEY
NATIONAL ACME
NEW BRITAIN

HARDINGE BROTHERS, INC., ELMIRA, N. Y.
▲ For more details circle NED-768 C4 on enclosed inquiry slip ▲



Safe
EASY HANDLING OF LOADS UP TO 3 TONS!

Unloading covered trucks, like other tough jobs, is no problem for one man with a "CANTON" Portable Floor Crane. This lightweight, tubular welded steel crane is made in 8 sizes ranging from one to three ton capacity. Bulletin N-52 tells the story.

The **HILL ACME·CO.**
"CANTON" DIVISION 1201 W. 65TH ST., CLEVELAND 2, OHIO
▲ For more details circle NED-769 C4 on enclosed inquiry slip ▲

NEW 5 KV BIDDLE IMPULSE CABLE FAULT LOCATING TRANSMITTER Model 5, 5 KV, 16 MUF

A new Transmitter, known as Model 5, has just been made available to those in the industrial field who operate an appreciable amount of 600 volt cable in their manufacturing processes. Manufacturers who operate cable in the 2500 volt delta and 4000 volt wye insulation class will also find this Transmitter well suited to their needs for proof testing and locating faults on important circuits. Similar applications include the proof testing and location of faults in drag cables such as used with electric shovels in strip mines. Other applications include extensive lighting circuits such as used at airports and in highway lighting.

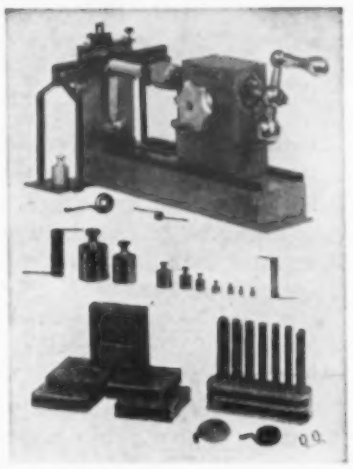
Faults on low voltage cable of the rubber insulated, unarmored type can often be located by the impulse method by simply walking along the cable run and listening for the noise of the discharge. This applies to the ordinary kinds of installations such as metallic conduit or duct construction, open wiring, drag cables, and those buried directly in the earth. Since low voltage circuits are short in length as compared to high voltage installations, listening for the noise of the discharge is usually more practical than using the Biddle Detector to trace the signal. On such installations it is more economical to obtain the Model 5 Transmitter only, without the Detector which is so necessary in the case of high voltage installations.

Write for BULLETIN 65-D

JAMES G. BIDDLE CO.
Electrical & Scientific Instruments
1316 ARCH STREET, PHILADELPHIA 7, PA.

▲ For more details circle NED-770 C4 on enclosed inquiry slip ▲

TORSION SPRING TESTER for general or production use



Universal spring testing machine is designed to check loads and deflectons of torsion, double torsion, spiral, clock and power springs. It can be used equally well for general purpose work and for torque and angular travel testing at production speeds from 300 to 600 tests per hour. Tester is accurate to within ¼-per cent. Torsion springs having wire diameter from 0.005 to 0.125-in. with from 1/16 to 6-in. OD and lengths from 1/16 to 6-in. can be tested for torque from ¼-oz-in. to 48 lb-in. Accessories provided included arbors, weights and adapters for extremely small springs. Made by **Carlson Co.**, 275 Broadway, New York 7, N. Y.

▲ For more details circle NED-772 C4 on enclosed inquiry slip ▲

PRESET COUNTER electronic unit designed to record up to 5000 counts per second

Production processes involving continuous unit flow, or any movement that can be measured by an electrical device or mechanical pickup, can be monitored by the model 164 preset counter at speeds up to 5000 counts per second. When a predetermined value of count is reached, the all-electronic unit provides an electric circuit closure. This can be applied to start, stop, divert, modify or measure a continuous process flow, operate an alarm, record a batch, bring in an auxiliary process function, etc.

Recycling can be automatic or by independent control. An electro-mechanical register records 1 million predetermined counting cycles. As a straight counter it will record up to 10 billion units. It can be set to respond to input impulses of either polarity between 4 and 60 v derived from a trip wire, pressure or cam switch, relay contact, photocell, magnetic pickup, crystal pickup, strain gage or similar transducer. Made by **Atomic Instrument Co.**, 86 Massachusetts Ave., Cambridge 39, Mass.

▲ For more details circle NED-773 C4 on enclosed inquiry slip ▲

Headquarters for ALMCO Supersheen SPEED FINISHING BARREL FINISHING COMPOUNDS

40 different scientifically combined compounds. With the huge selection you can choose the specific compound which will provide optimum results on a given job. Also, special custom made compounds. WHAT IS YOUR FINISHING PROBLEM? Write.

FREE CATALOG
52 pages of money-saving facts, figures. "Before and after photos". The latest on equipment, compounds.

ALMCO Supersheen
AMERICA'S LARGEST MANUFACTURER OF ADVANCED BARREL FINISHING EQUIPMENT – MATERIALS AND COMPOUNDS
ALBERT LEA, MINNESOTA

▲ For more details circle NED-775 C4 on enclosed inquiry slip ▲

Now a Better Welder AT A LOWER PRICE

Sureweld® A-C Shop Welder improved in many ways

The Sureweld A-C Shop Welder, for general utility welding, has always been outstanding for the remarkable arc stability it has provided, the desirable welding characteristics at all current levels and the operator's control of current value.

And now this welder has been greatly improved. The exclusive Sureweld 4-coil transformer has been positioned horizontally for even better ventilation and cool operation even with higher output. Primary insulation and secondary windings provide high dielectric strength for peak performance at high heats. Operator's convenience has been increased by side-mounting the control handle next to the high-visibility calibrated scale. Other advances markedly decrease KVA input and increase ease of operation, dependability and portability. Best of all, the improved design has resulted in lower prices.

Send for descriptive bulletin NH-101 today.

NCG NATIONAL CYLINDER GAS COMPANY
840 N. Michigan Avenue, Chicago 11, Ill.

▲ For more details circle NED-776 C4 on enclosed inquiry slip ▲

ELCO Specials

FOR EXAMPLE

By changing to the Cold Heading method of manufacturing, this stainless steel part was made at a savings of $6.45 per thousand. Over a period of one year the approximate savings in cost, in comparison to previous cost, was $4,837.50.

OVER 30 YEARS EXPERIENCE MAKING SPECIALS AND STANDARDS

ELCO TOOL AND SCREW CORPORATION
1946 BROADWAY • ROCKFORD, ILLINOIS

▲ For more details circle NED-771 C4 on enclosed inquiry slip ▲

Don't Spark a Disaster in Your Plant Use Ampco Safety Tools in hazardous locations

Why take chances with ordinary tools in hazardous locations — chances that can leave your property a smouldering ruin in a few minutes? Why risk the ever-present danger of fire when the right Ampco Safety Tool can prevent expensive property damage—save lives?

Ampco Safety Tools are approved and recommended by Factory Mutual Laboratories and other leading safety authorities for use in hazardous locations. These tools provide low-cost protection wherever there is danger of fire or explosion.

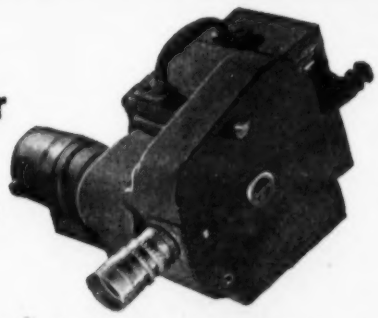
Choose your safety tools from the more than 400 types and sizes that make up the Ampco line. There's one for practically every job in your plant. Order Ampco today! Get the benefit of lower insurance rates and improved worker morale.

AMPCO METAL, INC.
DEPT. NE-3
MILWAUKEE 46, WISCONSIN

WEST OF THE ROCKIES, IT'S AMPCO BURBANK PLANT, BURBANK, CALIFORNIA • IN CANADA — SAFETY SUPPLY CO., TORONTO, ONTARIO

▲ For more details circle NED-774 C4 on enclosed inquiry slip ▲

Here's a trouble shooter for action too fast to see



A Kodak High Speed Camera lets you see what's going on by slowing action down to a walk. It takes up to 3200 pictures a second on 16mm film. An oscillograph trace can be superimposed on the same film. When the film is projected at normal speed, action appears slowed as much as 200 times.

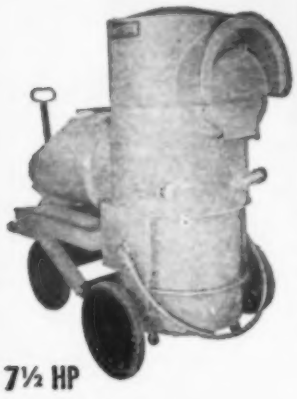
If you have a product design or performance problem involving high-speed mechanical action or fluid flow, a Kodak High Speed Camera may well provide the answer. It is easy to operate and has the right speed range for most industrial applications. To find out how others have used this versatile instrument, write for a copy of the booklet, "High Speed Motion Pictures in Industry."

Industrial Photographic Division
EASTMAN KODAK COMPANY
Rochester 4, N. Y.

the Kodak HIGH SPEED Camera

Kodak

▲ For more details circle NED-777 C4 on enclosed inquiry slip ▲



FOR THE BIG CLEANING JOBS IN INDUSTRY

7½ HP

This is the new heavy duty Spencer Portable Vacuum cleaner, reduced in height so that it will go through any factory door or onto most elevators. Its 7½ HP will supply more than enough vacuum power for two operators working at once. The dirt capacity is large—removable can rolls on casters. It will pick up heavy metals, reclaim foundry sand, remove hot materials and clean the largest factory areas in record time. Smaller machines for office and normal industrial service. Ask for Bulletin No. 102 and 112.

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT
SPENCER HARTFORD 466-M

For more details circle NED-778 C4 on enclosed inquiry slip

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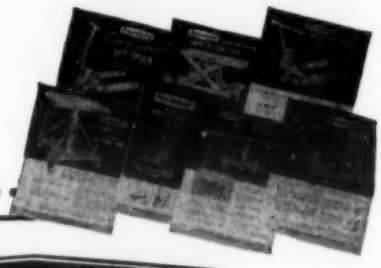


Learn how these

RAYMOND

HYDRAULIC TRUCKS & TABLES can cut costs, save time in your plant. Fill in and mail the coupon below for bulletins now!

Lightweight PALLET LIFT TRUCK

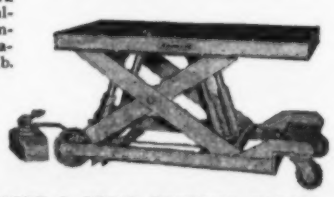
Watch one man handle 2,000 lb. loads with this *Raymond* Pallet Truck! Hydraulic power does heavy lifting. Separate pedals for lifting and lowering—270° turning radius.

Heavy Duty PALLET LIFT TRUCK

SKID LIFT TRUCK

Handle heaviest loads with ease with this rugged *Raymond* Truck! It's fully hydraulic, has exclusive finger-tip lowering, 360° turning radius. 4,000 or 6,000 lb. capacities.

Put this *Raymond* Truck to work handling skid loads! It's hydraulically operated, has exclusive finger-tip lowering, 360° turning radius. 2,500; 4,000 or 6,000 lb. capacities.



SHEET & STRIP FEEDING TABLE

Feed sheets faster at presses, cutting machines, forming equipment with this *Raymond* Table. Keeps material at correct working level. 2,000 to 20,000 lb. capacities.

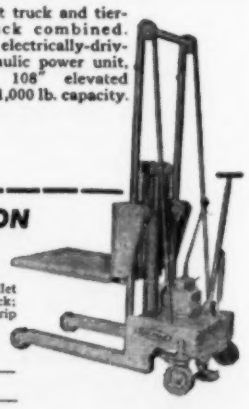
Portable ELEVATING TABLE

Use this *Raymond* Table for die handling, sheet feeding, work positioning or loading! Features 30" square top, 2,000 lb. capacity. Standard Model elevates from 28" to 44"—Telescopic Model, from 28" to 50".

HIGH LIFT TRUCK

Pick this *Raymond* Truck if you do die handling, loading, work positioning, ceiling maintenance!

It's a lift truck and tiering truck combined. Hand or electrically-driven hydraulic power unit, 60" or 108" elevated height. 1,000 lb. capacity.



GET THE FACTS

The RAYMOND CORPORATION

4112 Madison St., Greene, N.Y.

Please send me Bulletins describing: ☐ 2,000 lb. Pallet Truck; ☐ 4,000 lb. Pallet Truck; ☐ Skid Truck; ☐ Portable Elevating Table; ☐ Sheet & Strip Feeding Table; ☐ High Lift Truck.

NAME_____ TITLE_____

COMPANY_____

STREET_____

CITY_____ STATE_____

For more details circle NED-779 C4 on enclosed inquiry slip

New Literature and Catalogs

Custom-Built Metal Products

Falstrom Co. — Custom-built metal products of steel, aluminum and other alloys used in electronics and chemical process industries, metal parts application and manufacturing plants are pictured in 4-page bulletin 142.

For more details circle NED-780 C4 on enclosed inquiry slip

Air Compressors

Binks Mfg. Co.—Twenty-seven sizes of air compressors in five types are all described in 16-page catalog 810. Included are single or two-stage units, tank mounted, in sizes from ¼ to 15 hp; single and two-stage units, base mounted, from ¼ to 20 hp; and portable single-stage units in capacities from 2.2 to 105 cfm. Data are arranged for compressor selection.

For more details circle NED-781 C4 on enclosed inquiry slip

Stainless Tubular Products

Babcock & Wilcox Co., Tubular Products Div.—8-page technical data card 160 gives engineering test data on the comparative corrosion resistance of stainless steels to corrosive media. It covers six widely used stainless tubing steels in combination with several hundred corrosive media at various concentrations and temperatures.

For more details circle NED-782 C4 on enclosed inquiry slip

Hardness Testing Machines

Steel City Testing Machines, Inc.—8-page illustrated bulletin B 953 contains details of several different types of Brinell hardness testers and accessories, including portable instruments. Complete specifications are given for each model. Principles of hardness testing and several ASTM standards are also discussed.

For more details circle NED-783 C4 on enclosed inquiry slip

Portable Fume Washer

U. S. Stoneware Co., Process Equipment Div.—With capacities of 750 and 1650 cfm, Cyclonaire portable fume washers for low-cost fume removal in plants and laboratories are covered in 4-page illustrated bulletin FW-3. Complete technical data, drawings, performance charts and dimensional information are shown.

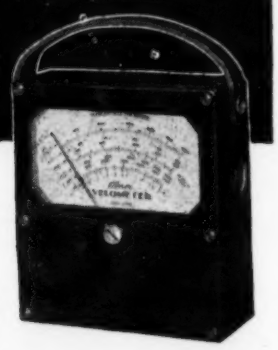
For more details circle NED-784 C4 on enclosed inquiry slip

Folding Lunch Room Equipment

Schieber Sales Co.—8-page illustrated folder "Just the Thing for Lunch" covers application of Mobil-Fold lunch room equipment in industrial plants. Tables and benches roll out for positioning in aisles or other open areas. They unfold in 2 minutes, making provision of a single purpose lunch room unnecessary.

For more details circle NED-785 C4 on enclosed inquiry slip

READ AIR VELOCITIES instantly... accurately... anywhere...



...WITH THE ALNOR VELOMETER

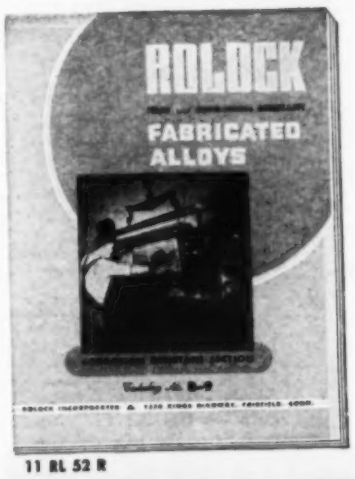
Alnor Velometer, a precision-built, self-contained, portable instrument, gives you instant, *accurate* readings of air velocities anywhere—in plants, mines, mills or laboratories. Measures speed of air flow through ducts, grilles, furnaces, spray booths or in the open. This rugged instrument needs no special care or delicate handling—anyone can use it and get accurate readings. Needs no calculations or reference charts. Available in a wide variety of scale ranges, and with a full assortment of jets and fittings for every application. You'll want full details and prices, so write for Bulletin 2448-G, Illinois Testing Laboratories, Inc., Room 529, 420 No. La Salle St., Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

For more details circle NED-786 C4 on enclosed inquiry slip

ROLOCK FABRICATED ALLOYS

NEW and COMPLETE...



specialized reference on Pickling, Degreasing, Galvanizing and other processing operations. Baskets, Manual and Motor-powered Barrels... Trunnion, Centrifugal, Bottom-dumping Baskets, Shell Case containers.

• • •

Send for this No. B-9 Corrosion Resistant Section of Rolock's catalog... just off the press. It's full of valuable ideas.

11 RL 52 R

ROLOCK, INC.
1412 KINGS HIGHWAY, FAIRFIELD, CONN.

For more details circle NED-787 C4 on enclosed inquiry slip

FREE BOOKLETS TELL ALL ABOUT ALUMINUM WIRE

Get the full facts about what a wonderful job U. S. Rubber Aluminum Wires and Cables are doing for the electrical industry. These two clearly written, informative booklets are packed with data on specifications, standards, photographs showing stripping, joining, soldering—installation facts of all kinds, plus property tables. These booklets are FREE. Send for your copies today!

UNITED STATES RUBBER COMPANY
Electrical Wire and Cable Department
ROCKEFELLER CENTER • NEW YORK 20, N. Y.

For more details circle NED-788 C4 on enclosed inquiry slip

ODD LOT JOBS ECONOMICALLY HANDLED

Udylite Handiplater

Here's a compact unit with compound uses. This small-size portable plater eliminates need for tying up full-size equipment with small jobs. Simply plug Handiplater in, pour in some of the solution dipped from your regular tank, and it will start saving you dollars as it efficiently plates the work.

Order today or write Udylite for more information.

- Removable, Koroseal lined, all-steel tub—½ pack capacity.
- Easily changed anode assembly for acid or alkaline solutions.
- Economical • Efficient • Convenient • Compact.

PIONEER OF A BETTER WAY IN PLATING
DETROIT 16, MICHIGAN

THE Udylite CORPORATION

For more details circle NED-789 C4 on enclosed inquiry slip

How cost-wise buyers rate porous, self-lubricating BRONZE BEARINGS

IN STOCK AT 92 BOSTON Gear DISTRIBUTORS at Factory Prices

Look under "Gears" in the Yellow Classified Section of your Telephone Directory for the Distributor nearest you.

Get this Catalog . . . lists 5112 standardized machine parts . . . your reliable "textbook" of drive design and maintenance. Ask your BOSTON Gear Distributor, or write—Boston Gear Works, 69 Hayward St., Quincy 71, Mass.

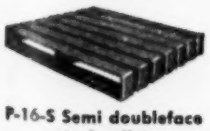
▲ For more details circle NED-790 C4 on enclosed inquiry slip ▲

Designed TO SPEED PRODUCTION

PB-127 Collapsible Box

P-135 Bar Carrier

P-1 Skid



P-16-S Semi doubleface steel pallet

Republic Steel Boxes and Skids keep production lines running smoothly. Design and construction features of Republic Boxes and Skids help speed movement of materials, conserve storage space, produce savings in all phases of materials handling.

Fabricated from heavy gage steel sheets, Republic Boxes and Skids feature deep reinforcing ribs for maximum strength and rigidity. Maintenance and up-keep are held to a minimum. Available in a wide range of sizes to meet the requirements of the individual job, Republic Steel Boxes and Skids can be used in combination with lift trucks, cranes or hand-operated units.

Republic Engineers are available for consultation on materials handling problems without cost or obligation.

Write for illustrated catalog on the complete line of Republic Materials Handling Equipment.

REPUBLIC STEEL CORPORATION
Pressed Steel Division
6206 Truscon Avenue, Cleveland 27, Ohio
GENERAL OFFICES • CLEVELAND 1, OHIO
Export Department: Chrysler Building, New York 17, N. Y.

Republic REPUBLIC STEEL
MATERIALS HANDLING EQUIPMENT

▲ For more details circle NED-791 C4 on enclosed inquiry slip ▲

New Processes & Materials

INDUSTRIAL WIPERS made of lintless nonwoven fabric

Highly absorbent and available in 12 x 14-in. and 12 x 18-in. sizes, industrial Wilson Wipes are convenient and economical to use. They are made of nonwoven material consisting of fibers held together with plastic bonding material. Having high wet strength, they can be washed repeatedly. Being lintless, they can be used for all types of industrial wiping operations. Made by **Wilson Wiping Cloth Co.**, Dept. NED, 2286 Smead Ave., Toledo, O.

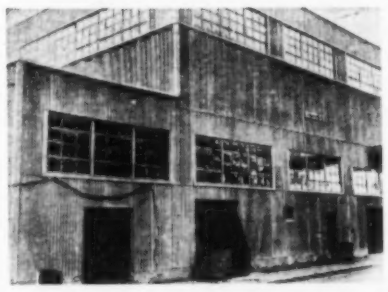
▲ For more details circle NED-792 C4 on enclosed inquiry slip ▲

LIQUID RESINS for reinforced plastics tooling

Special equipment or facilities are not required in application of Hysol liquid resins for production of reinforced plastics tooling. Resins are used in combination with fiber glass fabrics to produce spotting racks, checking fixtures and assembly jigs. Multiple duplications can be made from original models. A kit, priced at $18, contains everything required for evaluation of reinforced tools, including complete instructions. Hysol liquid resins have also been developed for use in casting stretch dies, acrylic form dies and patterns. Offered by **Houghton Laboratories, Inc.**, Dept. 3A, 333 Bush St., Olean, N. Y.

▲ For more details circle NED-793 C4 on enclosed inquiry slip ▲

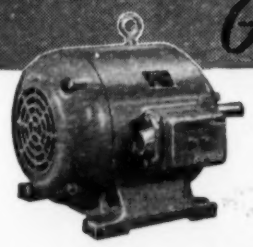
EXPLOSION-VENT WINDOWS made of extruded butyrate plastic



In the event of an explosion caused by sudden ignition of gas or airborne dust, the flexible plastic panes of this industrial window will bow and pull away from the casings to effect a quick release of pressure. Release is so fast that possibility of an excessive pressure build-up, sufficient to blow out walls or window frames, is eliminated. Panes of extruded Tenite butyrate plastic will not shatter. Glazing material is transparent and is held in place by galvanized strips crimped over all four edges for rigidity and ease of puttying. Tenite panes made by **General Plastics Co.**, Dept. E, 1400 N. Washington St., Marion, Ind.

▲ For more details circle NED-794 C4 on enclosed inquiry slip ▲

Great Motors from Great Britain!



- world-famous NEWMAN MOTORS
- net savings up to 40%
- immediate delivery
- unconditionally guaranteed
- superior design— to N.E.M.A. standards

For the first time, the complete world-famous line (2 million installed in 62 countries since 1938) of NEWMAN MOTORS, built to N.E.M.A. standards, is offered to the American Market.

Immediately available from our warehouse in New York in a complete range of squirrel cage and wound rotor types in sizes up to 230 H.P. *Any motor sent free and without obligation for examination and testing.*

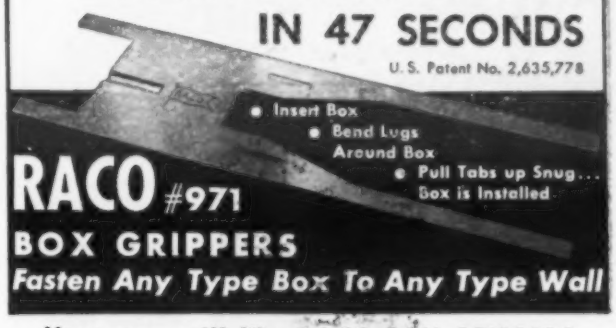
These are new, high-quality motors stamped with the prestige of a great motor-making company. Vast savings, dependability, unconditional guarantee are offered to American buyers.

Write for a catalog and price list to-day

Newman INDUSTRIES (AMERICA) INC.
41 BROAD STREET, NEW YORK 4, N.Y.

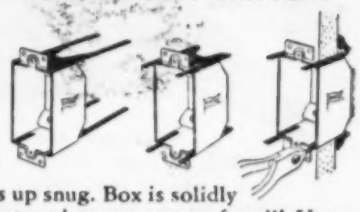
▲ For more details circle NED-795 C4 on enclosed inquiry slip ▲

Save Time! Save Money!
INSTALL A RACO BOX IN 47 SECONDS
U. S. Patent No. 2,635,778



RACO #971 BOX GRIPPERS
Fasten Any Type Box To Any Type Wall

Your men will like RACO BOX GRIPPERS



Raco Grippers are so easy to use! Just lay gripper on box . . . bend lugs over end of box and bend tabs forward. Insert box. Pull tabs up snug. Box is solidly and permanently fastened to any type of wall! Use Raco Box Grippers on any single or multiple wall box.

WRITE TODAY — Get Complete Information on RACO BOX GRIPPERS
"A BOX FOR EVERY NEED"

ASE RACO ALL-STEEL EQUIPMENT INC., Aurora, Ill.

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Nalco Test Laboratories

Use POWERS Thermostatic WATER MIXERS

POWERS Type HVC Thermostatic WATER MIXER
•
Write for Bulletin 365

for Accurate Control in testing operation shown above.

Photo shows National Aluminate Corp. equipment for visually testing solubility rate of Nalco chemical balls to determine exact actions of various water treatments under actual operating conditions in Nalco ball feeders.

Contact POWERS when you want accurate water temperature control. Most complete line made. (b67)

THE POWERS REGULATOR CO.
Skokie, Ill. • Offices in over 50 Cities

Over 60 Years of Automatic Temperature and Humidity Control

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Foot Safety and Low Cost DO go together with

A.W. SUPER-DIAMOND
Economy Rolled Steel Floor Plate

No other safety flooring can match *Super-Diamond's* durability and easy maintenance for so low a cost.

Super-Diamond takes hard blows and heavy loads in stride . . . resists heat, fire and most chemicals.

Super-Diamond cuts maintenance . . . is easy to clean with hose, mop or broom because there are no cracks or corners to hold dirt.

Super-Diamond features an exclusive engineered raised diamond pattern that puts 40 anti-skid traction points in every footstep for extra safety.

Mail handy coupon today for full details on **Super-Diamond**—high in safety, lowest in cost. There's no obligation.

Pattern ½ actual size.

SUPER-DIAMOND
ROLLED STEEL FLOOR PLATE

ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.

Please send your new, free Booklet SD-4 on A. W. *Super-Diamond* for safety.

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Address_____
City_____ Zone_____ State_____

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THE ONLY SAFETY SWITCH IN SPECIAL INDUSTRY ENCLOSURE!

NOW- NEMA Type XII

• This new heavy duty switch, built to NEMA XII specifications, is "tailor-made" for applications requiring protection from dirt, dust, oil and coolant.

Write for Bulletin SD-5. Address Square D Company, 6060 Rivard Street, Detroit 11, Michigan

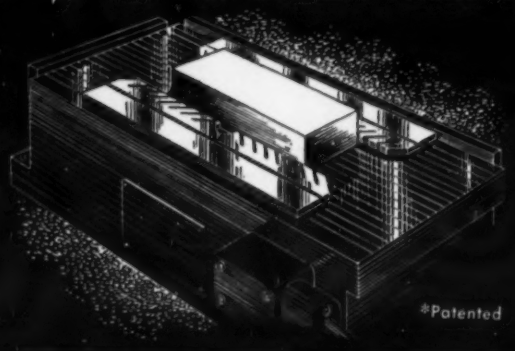
ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

▲ For more details circle NED-799 C4 on enclosed inquiry slip ▲

Magna-Vise*

. . . INCREASES THE VALUE OF YOUR MAGNETIC CHUCKS . . . ENABLES THEM TO HOLD *any* rigid non-magnetic material



*Patented

Get full details on this revolutionary shop-proved device . . . write Dept. ND-34

Hanchett MAGNA-LOCK CORPORATION

Magna-Lock Magnetic Chucks and Devices

BIG RAPIDS • MICHIGAN, U. S. A.

▲ For more details circle NED-800 C4 on enclosed inquiry slip ▲

HOW TO RESTORE CONCRETE FASTER, BETTER—AT LOWER COST!

BONDACTOR Concrete Gunning Equipment *Saves Money, Makes Money* on Nearly Any Maintenance Job

Bondactor concrete gunning equipment pays for itself many times over with labor-saving, cost-cutting performance on a wide variety of concrete restoration and maintenance jobs.

The Bondactor is used to repair column and beam encasements, ramps, loading docks, walkways, stairways, floors and other damaged or deteriorated concrete. Also used for fire-proofing, waterproofing and wet and dry sandblasting.

BEFORE, this loading dock was so badly damaged and deteriorated, it could hardly be used. Without a Bondactor, top slab would have to be removed, forms made and concrete poured.

AFTER applying concrete with the Bondactor, it's set and ready to go! No forms required, minimum cleaning. Gives a denser, stronger, long-wearing surface.

WRITE FOR INFORMATION! Investigate Bondactor equipment today! State intended use.

Air Placement EQUIPMENT COMPANY
1008 West 24th Street
Kansas City 8, Missouri

▲ For more details circle NED-801 C4 on enclosed inquiry slip ▲

New Literature & Catalogs

Movable Metal Walls

Mills Co.—68-page illustrated catalog 54 on movable walls emphasizes the flexibility and sound control advantages of Mills partitions for offices, factories and buildings of every type. Separate sections are devoted to flush pilaster building interiors, packed panel partitions and commercial partitions. Quick reference on movable walls, partitions, wall linings, ceilings, railings, counters, cabinets, accessories and hardware can be made in bulletin.

▲ For more details circle NED-802 C4 on enclosed inquiry slip ▲

Relief Valves

A. W. Cash Valve Mfg. Corp.—"Your Handbook on Temperature & Pressure Relief Valves" explains and illustrates the function of these valves insofar as both industrial and domestic water heaters are concerned. American Gas Association and ASME code requirements are mentioned. Other topics include installation, different types of construction, "do's and don'ts", and pressure settings.

▲ For more details circle NED-803 C4 on enclosed inquiry slip ▲

Liquid Petroleum Gas Engines

Twin Coach Co., Fageol Products Div.—Horizontal and vertical commercial internal combustion engines specially designed for liquid petroleum gas are covered in 6-page illustrated catalog L-8679. Models producing 180, 200 and 210 bhp are available for mobile or stationary equipment. Applications, performance curves and other data are provided on these overhead-camshaft units.

▲ For more details circle NED-804 C4 on enclosed inquiry slip ▲

Building Insulation

Pittsburgh Corning Corp.—In 24-page catalog on Foamglas building insulation are listed condensed specifications for product's application in walls, ceilings, floors, roofs, perimeters and low temperature space insulation. Physical properties, characteristics and performance of this cellular glass insulation are covered. Foamglas is furnished in 12 x 18-in. blocks, in thicknesses of 2, 2½, 3, 4 and 5-in. and cant strips, 4 x 4 x 18 in.

▲ For more details circle NED-805 C4 on enclosed inquiry slip ▲

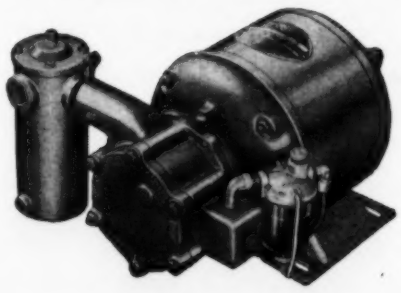
Electronic Tubes

578-page library reference edition of company's complete catalog provides a permanent and easy reference-record of every Amperex electronic tube and tube accessory made. Manual is looseleaf ring-binder type with plasticized Fabrihide cover. Tubes for communication, industrial, rectification, amateur, electromedical and special purpose applications are covered. Catalog can be obtained for $2.00 by writing on company letterhead to Myron Smoler, Sales Engineering Div., Amperex Electronic Corp., 233 Duffy Ave., Hicksville, N. Y.

▲ For more details circle NED-806 C4 on enclosed inquiry slip ▲

USE THIS COMPACT MOTOAIR PUMP FOR VACUUM

AVAILABLE IN SEVERAL SIZES



NO BELTS • NO COUPLING • DIRECT DRIVE makes it MORE COMPACT!

No other pump packs such dependable vacuum in so compact a space. It's complete with motor. Plug in and use. Visible, circulating lubrication.

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823

NEW JERSEY MACHINE Corporation

FACTORY SALES AND SERVICE BRANCHES CHICAGO CINCINNATI LOS ANGELES

1550 WILLOW AVENUE, HOBOKEN, N. J.

▲ For more details circle NED-807 C4 on enclosed inquiry slip ▲

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OVER 400 SEALANTS TO

SEAL IN THE QUALITY OF YOUR PRODUCT
SEAL OUT DIRT, WATER, RUST, AIR...

AUTOMOTIVE . . . seal metal seams, windows, spotwelded body joints against dust, water, rust, air.

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REFRIGERATION . . . bond and protect insulation, seal openings against air passage, seal joints and seams in refrigerators, freezers, air conditioners.

CONSTRUCTION . . seal sewer joints and paving joints, waterproof underground concrete . . also protective coatings, caulking compounds, barrier papers.

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To protect the quality of YOUR product, write us about your sealing problem.

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PRESSTITE ENGINEERING COMPANY

3742 Cheuteau Ave. St. Louis 10, Mo.

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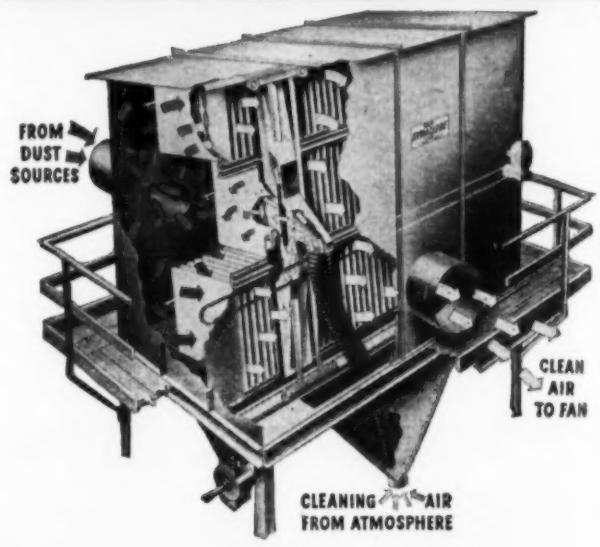
THE DYNACLONE®

PATENTED

The ULTIMATE in Dust Filters



1 CONSTANT SUCTION AT DUST SOURCES

2 SELF CLEANING FOR CONTINUOUS OPERATION

3 NO AUXILIARY MOTORS OR BLOWERS (THE MAIN OPERATING FAN DOES THE CLEANING)

4 NO ABRASION OF BAGS BY THE CLEANER

HOW IT OPERATES

(a) Dust laden air is drawn in from the dust sources as indicated by the shaded arrows.

(b) It is diffused into the dust chamber by the baffle plate.

(c) It is then drawn through the fabric of the filter bags and is cleaned as shown by the clear arrows.

(d) Clean air passes out of the case and goes to the suction fan.

(e) Concurrently, the traveler moves back and forth across the dust wall registering successively with one bag at a time.

(f) The suction which exists in the dust chamber draws a blast of atmospheric air through the bag in reverse directions and cleans that bag. (No shaking.)

SEND FOR BULLETIN NO. 102

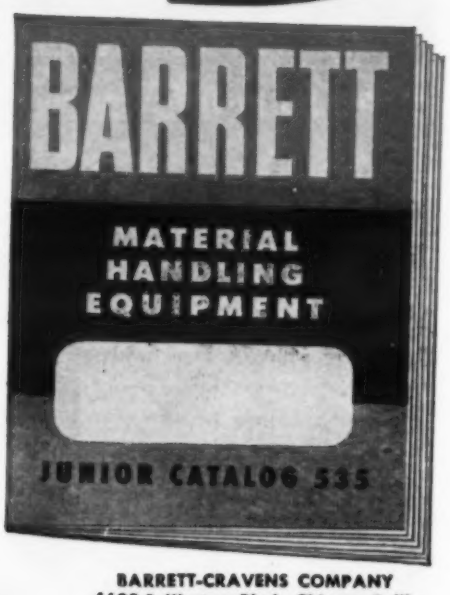
THE W. W. SLY MANUFACTURING CO.
4748 TRAIN AVENUE • CLEVELAND 2, OHIO

New York • Chicago • Philadelphia • Syracuse • Detroit • Buffalo Cincinnati • St. Louis • Minneapolis • Birmingham • Los Angeles • Toronto

▲ For more details circle NED-809 C4 on enclosed inquiry slip ▲

IDEAS ON MATERIALS HANDLING PROBLEMS

WRITE FOR 100-PAGE CATALOG 535



A Barrett engineer will help you select the equipment best suited to your needs —no obligation.

BARRETT-CRAVENS COMPANY
4623 S. Western Blvd., Chicago 9, Ill.
Representatives in All Principal Cities
Canadian Licensee: S. A. Armstrong, Ltd., Toronto, Canada

BARRETT
One Man Does More Than 3 or 4 ... with a Barrett

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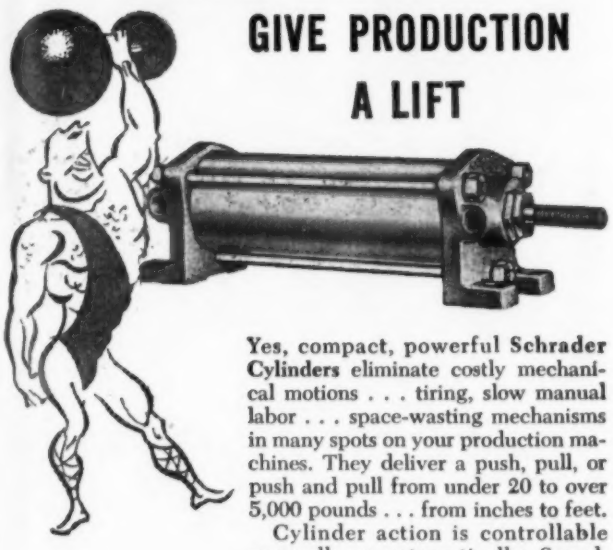
SCHRADER CYLINDERS GIVE PRODUCTION A LIFT



Yes, compact, powerful **Schrader Cylinders** eliminate costly mechanical motions . . . tiring, slow manual labor . . . space-wasting mechanisms in many spots on your production machines. They deliver a push, pull, or push and pull from under 20 to over 5,000 pounds . . . from inches to feet.

Cylinder action is controllable manually or automatically. Speed, force and cycle time are readily controlled by Schrader Valves and Accessories. Schrader Cylinders are available in any type of mounting, in many different types and sizes. Write today for full details.

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
459 Vanderbilt Ave., Dept. E-34, Brooklyn 38, N. Y.

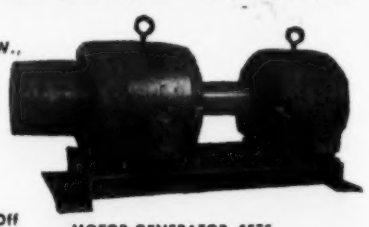
▲ For more details circle NED-811 C4 on enclosed inquiry slip ▲

...FOR A JOB WELL DONE!

KATO ENGINEERED ELECTRICAL EQUIPMENT

KATO ENGINEERING has been building Special Electrical Equipment and Machinery since 1928. Our modern, well equipped plant produces the finest in generators and electrical machinery from the smallest to the largest. *We invite your inquiries on special requirements!*

A. C. GENERATORS
Sizes from 100 watts to 300 K.W., in one or two bearings.
Speeds of 720—3600 R.P.M., 60 cycles. Also 15—800 cycles, single and three phase.
D. C. GENERATORS
Sizes ranging to 15 K.W.
ROTARY CONVERTERS
For Changing D.C. to A.C.
HIGH FREQUENCY CHANGERS
D. C. MOTORS up to 10 H. P.
D. C. MOTORS WITH A. C. Take-Off
A. C. MOTORS, SINGLE PHASE 1, 1½, 3 H.P.



MOTOR-GENERATOR SETS
D. C. to A. C., A. C. to D. C. 25 cycles to 60 cycles, 60 to 400 cycles.

KATO Engineering Company
WRITE TODAY FOR INFORMATION!
1464 FIRST AVENUE MANKATO, MINNESOTA

▲ For more details circle NED-812 C4 on enclosed inquiry slip ▲

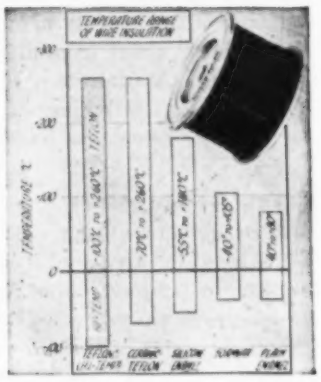
New Processes & Materials

SOUND DAMPING TAPE contributes to low noise level

Aluminum foil laminated cloth tape, identified as Permacel 12 Acoustimat sound damping tape, is being used in aircraft to effect a low noise level. Being self-sticking (pressure sensitive), it is easily applied to interior fuselage panels to provide an effective barrier against noises caused by vibration of the aluminum panels. Tape also acts as a thermal insulation. Made by **Permacel Tape Corp.**, Dept. R, New Brunswick, N. J.

▲ For more details circle NED-813 C4 on enclosed inquiry slip ▲

MAGNET WIRE for class H service or better



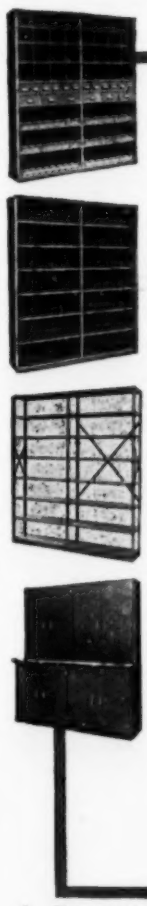
Insulated with Teflon, line of magnet wire is available in wide range of sizes and is designed for class H service or better. Sizes range from 14 to 50 AWG in six colors. Wire has a low loss factor, low dielectric constant and good dielectric strength. Characteristics remain stable at temperatures from −100° C to 260° C. Insulation is nonflammable and is inert to all commercial solvents and chemicals in addition to moisture. Solid conductor can be either annealed or soft copper and single, heavy, triple or quad thicknesses are available. Wire is recommended for high temperature and high frequency applications, especially where miniaturization is a design factor. Made by **Hitemp Wires, Inc.**, 24 Windsor Ave., Mineola, L. I., N. Y.

▲ For more details circle NED-814 C4 on enclosed inquiry slip ▲

SILICONE MOLD RELEASE AGENTS in ready-to-use or mixable types

Three Linde silicone products specially designed as shell mold release agents permit foundrymen to choose from an emulsion stock, a ready-to-use solution, or modified silicones for making up parting solutions in their own plant. LE-46 Silicone Parting Emulsion which is diluted with tap water provides good pattern release, low build-up on pattern and freedom from emulsion breakdown. LS-46 Silicone Parting Solution is offered for uses where even a small amount of pattern build-up cannot be tolerated. A parting solution similar to LS-46 can be made in the foundry using 5 per cent by weight of L-46 Modified Silicone Stock in a low aromatic hydrocarbon solvent such as mineral spirits. Formulated by **Linde Air Products Co.**, Room 308-NED, 30 E. 42nd St., New York 17, N. Y.

▲ For more details circle NED-815 C4 on enclosed inquiry slip ▲



In shelving it's the erected cost that counts!

De Luxe steel shelving costs less

- Easy to Install
- 100% Adjustable
- Fewer Parts
- Easier to Adjust
- 80% Less Bolts
- Precision Made

A De Luxe factory representative is near you, ready to give you complete engineering, planning and layout service, without obligation. Write today for free catalog.

DE LUXE METAL FURNITURE CO.
305 Struthers Street, Warren, Pa.
For over 25 Years Manufacturers of: Storage Shelving Library Shelving • Storage Cabinets • Shop Equipment

▲ For more details circle NED-816 C4 on enclosed inquiry slip ▲

FOR SHALLOW DIAMETERS ...a New *Universal* Type FEDERAL Gage

You can use this gage for either INSIDE or OUTSIDE diameters by simply adjusting the rest buttons so as to support the gage properly with reference to the dimension being gaged. These locating buttons are adjustable both vertically and longitudinally.

The Reference Contact, which also carries its own rest button, can be set anywhere along the tube to the required diameter.

The Sensitive Contact is pantograph-mounted for both sensitivity and accuracy.

The Model 88 is rigid; free from weakening joints and flimsiness. Easy to set and easy and positive to use. Write for descriptive folder to Federal Products Corporation, 4173 Eddy Street, Providence 1, R. I.

Ask FEDERAL FOR ANYTHING IN MODERN GAGES...
Dial Indicating, Air, Electric, or Electronic — for Inspecting, Measuring, Sorting, or Machine Size Control.

Visit Booths 315-321 at A.S.T.E. Show—Philadelphia—April 26-30

▲ For more details circle NED-817 C4 on enclosed inquiry slip ▲

TAKE A GOOD LOOK at your BULK-HANDLING methods

How do you handle bulk or loose materials? Still "manhandling" them or using other slow, outmoded methods? Thousands of plants have solved these problems with the purchase of one versatile machine — the Hough "PAYLOADER" tractor-shovel. It digs, scoops-up, carries, loads, dumps,

spreads, unloads and does many other chores. Goes right to work, inside or outside, without revamping or expensive alteration of plant layout or facilities.

There are seven sizes and models of "PAYLOADERS" from 12 cu. ft. to 1½ cu. yd. bucket capacity to fit your needs. And there's a Hough Distributor near you with lots of application experience and complete service facilities. The Frank G. Hough Co., 746 Sunnyside Ave., Libertyville, Illinois.

YOU CAN'T COMPETE IF YOUR EQUIPMENT IS OBSOLETE!

PAYLOADER® THE FRANK G. HOUGH CO. • Since 1920

▲ For more details circle NED-818 C4 on enclosed inquiry slip ▲

CUT COST with FLEXAUST*

SIZES 1¼ in. ID to 36 in. ID

the high-quality spiral-wire reinforced hose for Fume exhaust, Dust or chip collection, Ventilation, Movement of materials

FLEXAUST enables you to cut hose costs because it's:
EASY TO INSTALL – Anyone can install FLEXAUST quickly.
DURABLE – Highly resistant to abrasion, aging, corrosion, moisture, chemical deterioration, flexing fatigue.
LIGHT – Weighs only ⅓ as much as comparable metal pipe.
HIGHLY FLEXIBLE – Maintains large sections on sharp bends; no kinking, no flattening.
STRONG – Bonded, double ply, double overlap construction.
AIRTIGHT – Ideal for either pressure or suction.

For details on sizes, coatings, accessories, flow characteristics, write for Catalog 35.

*Trade-marks

THE FLEXAUST COMPANY
Dept. NE-3 100 Park Avenue, New York 17, N. Y.
Formerly American Ventilating Hose Co.

FLEXAUST* FORTOVENT* BLOFLEX*

▲ For more details circle NED-819 C4 on enclosed inquiry slip ▲

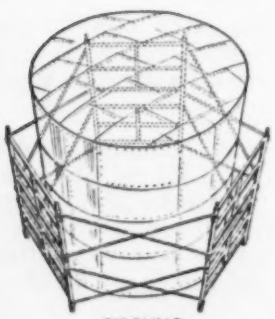
Overhead Work's *Not just 'UP'*

When you have to go *around* a job or *get inside* a curved structure, buy Universal Ezebilt—*the one scaffold* you can use on most every job. For example, Ezebilt's exclusive Gravity-Lock brace mechanism lets you "swivel" standard panels to "circle" curved surfaces, or to "rack-down" safely in narrow passages. And you don't need to fuss with nuts and bolts or loose parts — Ezebilt's rustproof Gravity-Lock helps you to put your scaffold up and take it down in much less time — handle jobs easier and faster because there are *'no bolts to master.'*

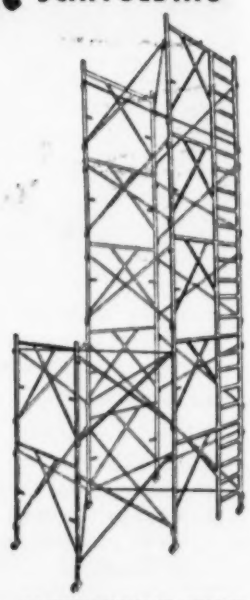
UNIVERSAL Ezebilt SCAFFOLDING

Write for New Catalog

Shows how to "custom-build" work platforms to any size or shape with standard Universal Ezebilt Scaffolding.



CIRCLING



SAFETY ROLLING TOWER

Distributors offer fast help and service. See your phone directory.

UNIVERSAL MANUFACTURING CORP.
ZELIENOPLE 6, PA.

▲ For more details circle NED-820 C4 on enclosed inquiry slip ▲

New Literature & Catalogs

Transductor Magnetic Amplifiers

Westinghouse Electric Corp.—Current and potential transductor magnetic amplifiers developed for instrumentation, metering and control of direct current voltages and currents requiring isolation are subject of 8-page technical data bulletin TD 52-601. Operation theory, applications, operating characteristics and terminology are individually treated.

▲ For more details circle NED-821 C4 on enclosed inquiry slip ▲

Pipe Line Connections

Taylor Forge & Pipe Works—"Design of Hot Tap Tee Connections in High Pressure Pipelines" is title of technical manual No. 533. Problem is analysed from the angle of making branch connections without interrupting fluid flow. A design approach aimed at keeping stress levels around the connections in harmony with those common in high pressure lines is suggested. Manual is a reprint from an ASME paper and contains 52 pages.

▲ For more details circle NED-822 C4 on enclosed inquiry slip ▲

Freon Compressors

Worthington Corp.—Freon compressors for applications in air conditioning and refrigeration are shown in 12-page illustrated bulletin C-1100-B30C. In addition to the compressors themselves, data are given on self-contained compressor units and on condenser units. Compressors are available in ratings from 3 to 150 hp and are of the single-acting enclosed multicylinder type.

▲ For more details circle NED-823 C4 on enclosed inquiry slip ▲

Laboratory Apparatus

Labline, Inc.—92-page illustrated catalog on laboratory apparatus covers complete line of products. These include constant temperature baths, circulating systems, ovens, petroleum testing apparatus, incubators, constant temperature rooms, clamping devices, heaters, wet test meters, and electronic relays and stirrers.

▲ For more details circle NED-824 C4 on enclosed inquiry slip ▲

More Work from Wire Rope

H. K. Porter Co., Leschen Wire Rope Div.—Seventeen tips for improving wire rope service are given in folder "How to Get More Work Out of Your Wire Rope." Suggestions for correct handling and storage and recommendations for its proper use are included.

▲ For more details circle NED-825 C4 on enclosed inquiry slip ▲

Welding Jigs & Fixtures

Reed Engineering Co.—16-page illustrated bulletin on line of welding jigs and fixtures contains information on modifications to present equipment. Also covered are several new machines designed for the tank fabrication field.

▲ For more details circle NED-826 C4 on enclosed inquiry slip ▲

Easy to use . . . Easy to clean . . . Easy to service

DERBY SEALER MODEL 32 GUMMED TAPE DISPENSER
For Shipping Room and Production Line Packaging

● Rugged simplicity aptly describes the Model 32. Derby's exclusive, one-piece solid casting eliminates parts and provides added rigidity. What's more, the Model 32 is easy to clean, even during the hot summer months when machines tend to "gum-up."

● The Derby Model 32 accommodates any tape from 1" to 3" wide. Delivers from 4 inches to 34 inches of tape at one stroke.

● Derby's exclusive "moisture-control" system maintains a maximum high water level in the tank to assure a constant supply of water to the brush, no matter how fast tape is dispensed.

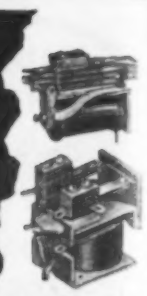
● Also available is the Model 32-T with tool steel shear-type blades for cutting reinforced strapping tapes. Blades have two cutting edges to double their useful life before resharpening.

For further information, write Dept. NED

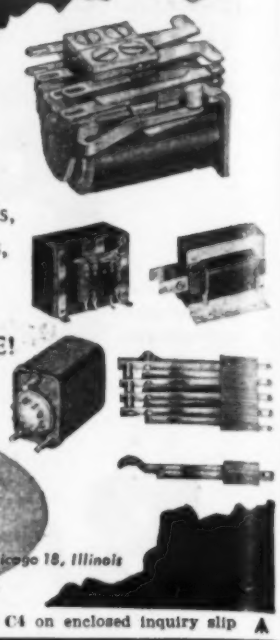
DERBY SEALERS, INC.
Derby, Connecticut

▲ For more details circle NED-827 C4 on enclosed inquiry slip ▲

Relays · solenoids transformers · switches coils · hermetic sealing – all from ONE source!



Comar is equipped to manufacture a complete range of electrical control components for industrial and military requirements. Relays of all types, solenoids, coils, switches, transformers, hermetic sealing, made to your specifications . . . ALL FROM ONE SOURCE! Send for details now!



Comar ELECTRIC COMPANY
3349 Addison Street • Chicago 18, Illinois

▲ For more details circle NED-828 C4 on enclosed inquiry slip ▲

Yes, it's STEEL

. . . and a "Steal" at its Price!

PIC STEEL UNIONS* are priced *right*. They cost less than a galvanized, no more than a black malleable union. Yes and here's what you get for your money:

● 100% zinc plating — even threads are zinc plated to combat rust
● Easy installation — ends are uniformly flat-sided, uniformly parallel of heavy steel pipe coupling stock
● Tight seal — due to special wedge type bronze seat
● Good looks and strength — ideal for original equipment

**For 150# Service — Write for FREE Samples*

DART UNION COMPANY
132 Thurbers Avenue, Providence 5, R.I.
The Fairbanks Co. — Distributors
Boston • New York • Pittsburgh • Rome, Ga.

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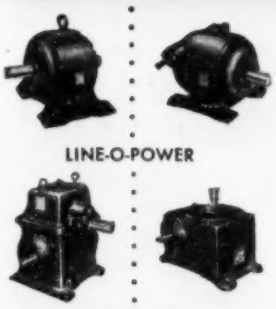
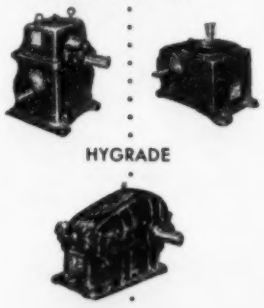
Set the Pace at SLOW SPEED with FOOTE BROS. DRIVES



LINE-O-POWER



HYGRADE

MAXI-POWER

No matter how tough the job, you step down high speeds with ease when Foote Bros. Drives do the work. There's a complete line with an extremely wide range of ratios and capacities—a drive to meet all requirements for heavy-duty service. Solve your slow speed drive problems through the finest gearing in the most compact design — Foote Bros. Drives.

This Trademark Stands for the Finest in Industrial Gearing

FOR HELPFUL, DETAILED INFORMATION PLEASE WRITE: Dept. NE

Foote Bros. Gear and Machine Corporation
4545 S. Western Boulevard, Chicago 9, Illinois

FOOTE BROS.
Better Power Transmission Through Better Gears

▲ For more details circle NED-830 C4 on enclosed inquiry slip ▲

CUTS COSTS AT ANY ANGLE

'Tugit' is the handiest portable tool made for lifting and pulling loads at any angle. Small size, and spur-geared hoist efficiency make close-quarter operation a cinch. The powerful, automatic brake acts quickly and smoothly—no kicking handle! Spotting is accurate—loads can be moved as little as 3/32" at a time.

In placing machines, tightening guy wires, laying pipe or a-thousand-and-one other jobs—'Tugit' saves time and money. It's light, compact, fits any tool box. One and two-ton sizes available. Ask your "Shaw-Box" Distributor for details or send for Bulletin 388.

'TUGIT'® HOISTS

MANNING, MAXWELL & MOORE, INC.
MUSKEGON, MICHIGAN

Builders of "Shaw-Box" and 'Load Lifter' Cranes, 'Budgit' and 'Load Lifter' Hoists and other lifting specialties. Makers of 'Ashcroft' Gauges, 'Hancock' Valves, 'Consolidated' Safety and Relief Valves, 'American' Industrial Instruments, and Aircraft Products.

▲ For more details circle NED-831 C4 on enclosed inquiry slip ▲

MORE TON-MILES PER TIRE WITH...

MONARCH

To get more ton-miles per tire ... (1) buy dependable MONARCH industrial solid tires ... (2) follow the MONARCH tire care program. The 28-page illustrated MONARCH catalog presents complete data to aid in selecting the right pressed-on tire for each job and offers suggestions for obtaining maximum service from your tires. Write for your copy today.

THE MONARCH RUBBER COMPANY
260 LINCOLN PARK
HARTVILLE, OHIO

1835-MR
7-255 Gen'l Motors Bldg. • Detroit 2, Mich.
SPECIALISTS IN INDUSTRIAL SOLID TIRES

▲ For more details circle NED-832 C4 on enclosed inquiry slip ▲

Won't Smudge!

LABELON PLASTIC

RESISTS: DIRT GREASE WATER ACIDS

Write on it TAPE

STICKS WITHOUT MOISTENING

LABELON TAPE sticks without moistening to any smooth, dry surface—yet strips off cleanly. Write or print on it with pencil, stylus or typewriter. Message WON'T SMUDGE ... defies dirt, grease, water, acids ... stays clean, easy-to-read—because writing surface is protected by transparent plastic! Available in rolls—or in flat form on backing sheets for typewriter use.

Use Labelon "Write on it" Tape to label stockroom shelves, bins, tools, hard-to-mark parts; for indicating rejects and service department repairs; for marking laboratory equipment, supplies, experiments; for panel boards or wiring; for office files, folders, etc.

For samples and prices, see your nearest dealer or write Dept. NED-3.

LABELON TAPE CO., INC.
450 Atlantic Ave., Rochester 9, N. Y.

▲ For more details circle NED-833 C4 on enclosed inquiry slip ▲

New Processes & Materials

CONCRETE PATCHING MATERIAL takes traffic immediately

Speedy and simple repair of holes in concrete or macadam driveways and floors is made possible by Jet Patch, a modified asphalt preparation with bituminous aggregate. Product is packed ready-mixed in 30 and 55-gal drums. It is simply shovelled into hole or spalled area and tamped down. Traffic over spot can be resumed immediately. Patch is coarse-grained material somewhat smaller than corn grain and will feather-edge readily. Once laid, neither rainwater nor washing down of floors will affect the patch. It is unaffected by motor oils and gasoline dripping. Developed by **Warren Refining & Chemical Co.**, Room 702, Finance Bldg., Cleveland 15, O.

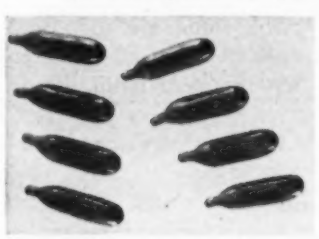
▲ For more details circle NED-834 C4 on enclosed inquiry slip ▲

SPRAY BOOTH PLASTIC COATING is fireproof, peels off easily

Fireproof and flameproof characteristics are featured by Peel Filmite, a peelable plastic spray booth film coat which can be sprayed on and dries in 10 minutes. It forms a uniform white, opaque coating that resists alkalies, acids, oils, grease, fats, alcohol and gasoline. Heat will not cause coat to sag or drip. When paint overspray accumulates, operator merely scores coating and peels it off easily in big sheets. Product also stops sub-film rusting. Formulated by **DuBois Co.**, Dept. N, 1120 W. Front St., Cincinnati 3, O.

▲ For more details circle NED-835 C4 on enclosed inquiry slip ▲

LIQUID DETERGENT CLEANER packaged in plastic capsule

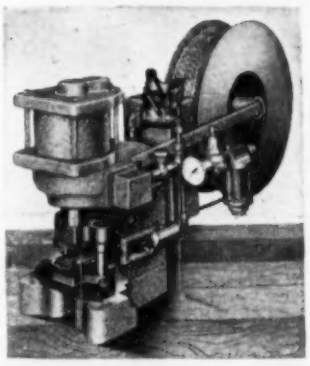


Right amount of Washette concentrated liquid detergent cleaner is contained in one of these plastic capsules for a full bucket of water. It will remove most industrial dirts and greases after mixing instantly with water. Detergent solution is sponged on and wiped off. Product is harmless to skin, fabric, rubber or paint and can be safely used in all cleaning operations. Made by **Miller Mfg. Co.**, 1102 N. 32nd St., Camden, N. J.

▲ For more details circle NED-836 C4 on enclosed inquiry slip ▲

FAST, COST-CUTTING TERMINAL ATTACHING on NEW "P-M"

advanced design



COLD CRIMPING MACHINE

Advanced design of new P-M automatic terminal attaching machine provides many improvements that drastically reduce tool set-up time and production lag. Interchangeable rolling tools are quickly set up in special die-set fully accessible in machine, and removable for faster tool changing on bench. Extra die-sets keep tools set up for quick job change-over.

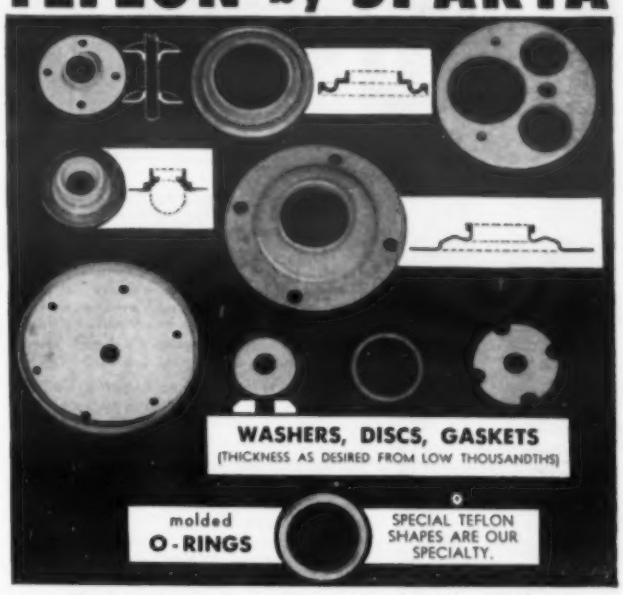
Using strip terminals in continuous form supplied on nonreturnable reels, the machine automatically crimps and cuts off in one operation to produce fast, efficient, economical terminations. Engineered for rugged, continuous operation. Requires minimum production space. Simple, quiet air pressure operation. Modern color scheme and design innovations promote operator acceptance and minimize operational fatigue.

Low priced for short or long runs, P-M machine is sold outright with set of rolling tools ready for operation. Illustrated catalog of standard strip terminals, with full specifications, available when requested on company letterhead.

PATTON-MacGUYER CO.
16 Virginia Avenue . . . Providence R. I.

▲ For more details circle NED-837 C4 on enclosed inquiry slip ▲

TEFLON by SPARTA

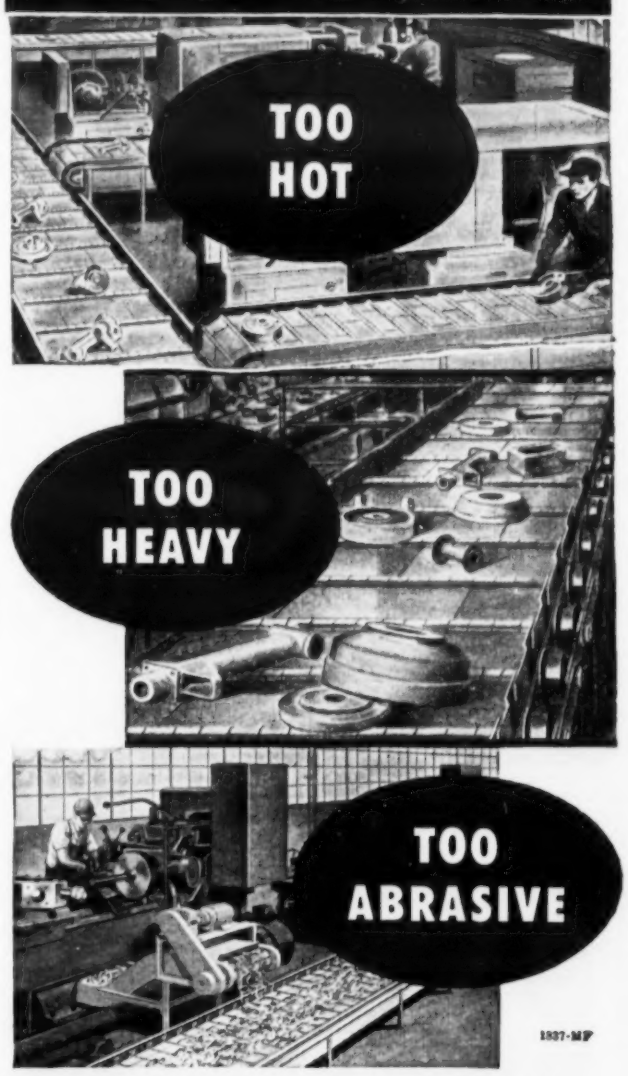


If you have a problem concerning sealing, non-friction, non-adhesion, chemical inertness, temperature, electrical or other . . . that one or more of the remarkable combinations of properties of TEFLON can help you solve, let us try to help.

SPARTA MANUFACTURING Company • EAST SPARTA, OHIO

▲ For more details circle NED-838 C4 on enclosed inquiry slip ▲

NEVER



for MAY-FRAN hinged-steel belt

Built for the tough jobs . . . MAY-FRAN hinged-steel conveyor belting withstands conditions that quickly destroy ordinary belts. Its special design and sturdy construction make it suitable for conveying hot forgings, heavy castings, abrasive scrap and many other items.

MAY-FRAN hinged-steel belting can be furnished in widths from 6 inches to 6 feet and in any length or carrying capacity. Solid and perforated links are available in 2½ to 12-inch pitch lengths.

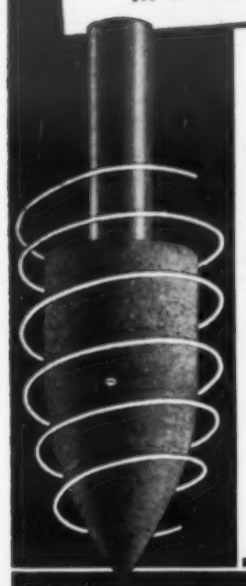
For complete information on the unique MAY-FRAN hinged-steel belting, write today for Bulletin MF-530.

MAY-FRAN ENGINEERING, INC.

1711 CLARKSTONE ROAD • CLEVELAND 12, OHIO

▲ For more details circle NED-839 C4 on enclosed inquiry slip ▲

NEW! EXTRA DURABLE
NU-TEX
MOUNTED POINTS



speed up finishing
. . . cut costs

FASTER Designed to grind, polish and deburr all types of metals and plastics in one simple operation. Soft, cushion-like action produces even, extremely smooth finished surfaces quickly and easily . . . eliminates filing, scraping, sanding or burnishing.

LONGER LASTING Bonded together with a special resin under an exclusive manufacturing process for extra durability. Last longer under continuous operation . . . eliminate clogging or loading, even on softer metals.

PROMPT DELIVERIES Eliminate costly shipping delays. Choose from a complete line of Nu-Tex Mounted Points in all popular grit sizes . . . get prompt service on every order. Write for details. Atlantic Abrasive Corp. 504 Pearl Street, South Braintree 85, Mass.

Good Points To Remember

ATLANTIC ABRASIVE CORP.
South Braintree 85, Massachusetts

For more details circle NED-841 C4 on enclosed inquiry slip

Electrically-Controlled
Super Speed
AIR CYLINDER

Six to ten times faster than conventional air cylinders, the Bellows Super-Speed Air Motor develops tremendous speed and power from normal air pressure. At 100 lbs. air, power is great enough to punch ½" dia. hole through 1/16" thick mild steel. Ideal for staking, riveting, forming, swedging, stamping or punching.

The Super-Speed Air Motor is a complete power unit with built-in low voltage Electroaire directional valve and speed regulators. (Also available with manually controlled valve.) Only one air connection needed.

Write for Bulletin 1163 today.
Address: Dept. NED 354
The Bellows Co., Akron 9, Ohio.

2½" BORE
•
Stroke Lengths
2½" 4", 6", 9", 12"
•
Seven Mounting Styles

The Bellows Co.
Akron 9, Ohio
1314

For more details circle NED-842 C4 on enclosed inquiry slip

NEW G-E RENEWABLE FUSE
improved 4 ways

Check these important features:

1. Silver-plated electrical contact areas keep the new G-E fuse from overheating because of copper oxidation. 2. New link design gives accurate protection, plus freedom from blows caused by harmless momentary overloads. 3. Only two parts to remove when replacing links. 4. Solid brass fittings and thick fiber casing make the new G-E fuse exceptionally rugged.

Made in ferrule and knife-blade ratings—listed by Underwriters' Laboratories, Inc. It will pay you to get further information—see your G-E Construction Materials distributor, or, write to Section D84-361, Construction Materials Division, General Electric Company, Bridgeport 2, Conn.

You can put your confidence in—
GENERAL ELECTRIC

For more details circle NED-843 C4 on enclosed inquiry slip

New Literature & Catalogs

Insulations

Johns-Manville—40-page illustrated industrial products catalog gives essential data on a range of products including insulations, refractories, asbestos cement pipe, packings, gaskets, electrical products, friction materials, roofing, siding, flooring, partitions and ceilings. Complete application data are provided for items within the various classifications.

For more details circle NED-844 C4 on enclosed inquiry slip

Sprinkler-Type Extinguishers

Stop-Fire, Inc.—Having a 1-gal capacity automatic sprinkler-type fire extinguishers are covered in 2-page illustrated data sheet SP-753. Units are designed to be suspended over danger areas, are available to operate automatically at any required temperature and utilize chlorobromomethane pressurized with CO_2 as extinguishant. Construction features and performance data are given.

For more details circle NED-845 C4 on enclosed inquiry slip

Packaging With Plastics & Resins

Bakelite Co.—Details on latest applications of molded and blown plastics, coatings, adhesives, film and rigid sheet materials for both packaging and display are contained in "1954 Guide to Improved Packaging with Bakelite Plastics and Resins." Illustrated with 48 application photos, booklet briefly describes major properties, advantages, color and finish possibilities of each material.

For more details circle NED-846 C4 on enclosed inquiry slip

Forgings & Castings

Allegheny Ludlum Steel Corp., Forging & Casting Div.— Smooth hammered forging, composite die sections and cast to shape tool steels are covered in 28-page illustrated bulletin FC-4. Weight limits, analyses, applications, heat treatments and ordering information are among topics covered in detail.

For more details circle NED-847 C4 on enclosed inquiry slip

Pigment Dispersion

Kinetic Dispersion Corp.—40-page illustrated manual contains a comprehensive discussion of pigment dispersion theory, problems and equipment. Comparision charts or results of various methods and other technical data are contained, in addition to studies of the behavior of materials in solid, liquid and dispersional phases.

For more details circle NED-848 C4 on enclosed inquiry slip

Hydraulic Adjustable Ramp

Rowe Methods, Inc.—Manual floating 20,000-lb capacity hydraulic adjustable ramp, designed to bridge loading platforms with highway truck beds is subject of illustrated bulletin. Known as the No. 20 M.F. Adjust-A-Dock, ramp can be recessed into dock, partially recessed, or installed in front of dock.

For more details circle NED-849 C4 on enclosed inquiry slip

FOR BETTER CONTROL IN THE TIGHT SPOTS

CRANE IRON BODY CLAMP GATE VALVES

Here's an inexpensive, versatile gate valve with a special talent for tight places. It's unusually compact and extra sturdy. You can use it for steam, hot and cold water, for crude, fuel and lubricating oils, and for gas and gasoline services. All-iron inside screw valves have one-piece, free-draining bonnet. Ideal for handling heavy, sticky fluids. For inspection or cleanout, the bonnet assembly and wedge disc lift out easily—the body stays in the line. And you'll have no trouble in reassembling—the bonnet joint always makes up tight and stays tight.

Send for Folder AD 1667 or ask your Crane Representative for full details.

Crane Wedge Disc Clamp Gate Valves come in OS&Y, inside screw, and quick-opening patterns, all-iron or brass trimmed. Sizes up to 4 in. Working pressures up to 150 psi saturated steam.

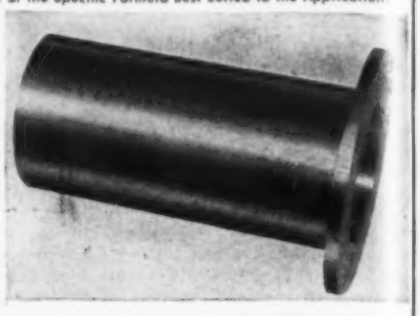
CRANE CO., 836 S. Michigan Avenue, Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas
CRANE *Everything for Every Piping System*
VALVES • FITTINGS • PIPE • PLUMBING AND HEATING

For more details circle NED-850 C4 on enclosed inquiry slip

You Get a Money-Back Guarantee of Longer Service and Lower Maintenance Cost
when you use
PROMET
THE Engineered BRONZE

BEARINGS • BUSHINGS • WEARING PARTS
Machined or Rough Cast of the Specific Formula Best Suited to the Application

American Crucible methods, experience, know-how and equipment save you real money. Castings to your patterns — any size, shape or section up to 3,000 lbs. Pattern making, designing and machining.



TEMPORARY LUBRICATION FAILURES NEEDN'T BE EXPENSIVE
Hard and strong enough to take the constant pounding of heavy shock loads and high compressive forces.

PROMET MEDIUM AND HIGH LEAD BRONZES
#1, #2-S, #6, #6-SK, carry on until lubrication can be restored. They are sufficiently high in lead content and soft enough to prevent seizure and to embed harder particles that would ordinarily result in scoring. They are easily machined at high speeds without lubricants or coolants.

Send blueprints, conditions of operation and other data for recommendations and quotations.
Write for free literature today.

THE AMERICAN CRUCIBLE PRODUCTS CO.
1327 Oberlin Avenue • Lorain, Ohio

For more details circle NED-851 C4 on enclosed inquiry slip

FLEXON REX-TUBE

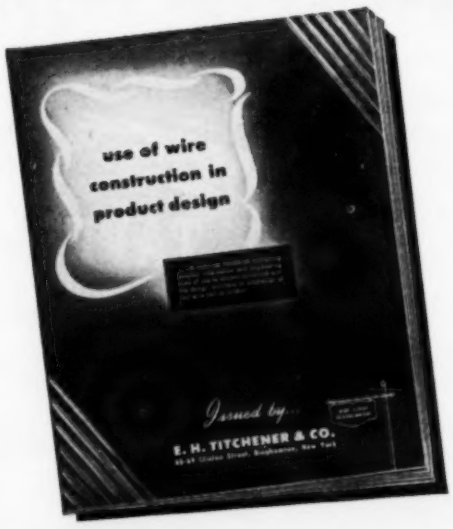
FLEXIBLE METAL HOSE of 1001 uses . . .

. . . for the practical handling of saturated steam, non-searching liquids or gases—substances such as tar, asphalt and petroleum products. It is also widely used for ducting, tubing and conduits. Rex-Tube absorbs vibration—expansion and contraction—misalignment. It combines the flexibility of hose with the durability of metal. Available in a wide range of sizes with fittings for your needs. Working pressures to 750 psi and temperatures to 1200° F. Write today for more information.

FLEXONICS CORPORATION
Formerly Chicago Metal Hose Corporation
1343 S. Third Avenue, Maywood, Illinois
Manufacturers of flexible metal hose and conduit, expansion joints, metallic bellows and assemblies of these components.
In Canada: Flexonics Corporation of Canada, Ltd., Brampton, Ontario

For more details circle NED-852 C4 on enclosed inquiry slip

Free HANDBOOK

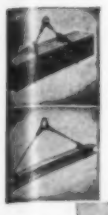


Shows how the cost of many products has been *reduced* by replacing castings, forgings, stampings, tubing and sheet steel components with less expensive welded-wire and wire-and-strip assemblies. Also contains technical data—charts, tables, drawings, etc.—plus information on various types of production procedures, etc. Write for your copy to:
E. H. Titchener & Co.
101 Clinton St., Binghamton, N. Y.

For more details circle NED-853 C4 on enclosed inquiry slip

ELECTROLINE CHOKER SLING FITTING ADJUSTS AUTOMATICALLY TO ANY ANGLE OF PULL

For prolonging wire rope life, ease of attachment and complete safety, this revolutionary Electroline Choker Sling Fitting tops them all. Here's why:



- pivoted members adjust automatically to any load —they take the bend, instead of the rope.
- can't disengage under tension, or shock, the fitting always engages the rope.
- easy to apply—goes on in seconds, saves time.
- the Electroline Choker Sling Fitting outlives the rope it protects, reuse it over and over again.

A time and labor saver—in mills, factories, docks, material yards, warehouses: Wherever wire rope choker slings are used.

Send for bulletin "King of Sling Fittings"—which tells all.

Electroline Company
4121 South La Salle Street
CHICAGO 9, ILLINOIS
In Canada: Powerlite Devices, Ltd., Toronto

▲ For more details circle **NED-854 C4** on enclosed inquiry slip ▲

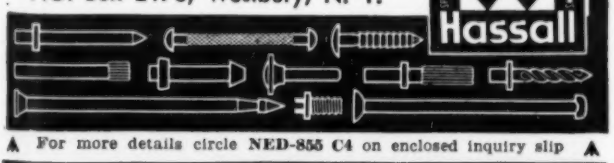
WRITE FOR FREE Hassall decimal-equivalent wall chart

In such popular demand (we've given away 50,000) — we've made it better. The new chart is far easier to read! In three colors to automatically signal decimal-equivalents of fractions. The special products which frame the chart are a constant reminder of a good source for cold-headed parts.

ESTABLISHED 1850

JOHN HASSALL, INC.
P.O. Box 2178, Westbury, N. Y.

Hassall



▲ For more details circle **NED-855 C4** on enclosed inquiry slip ▲

FASTER, LOWER COST, BETTER Pipe Identification with

Brady Pressure-Sensitive Markers

You also get NEW *BLUE STREAK* RELEASE COATING
Positively eliminates tagging, twisting, tearing, distortion. Markers come right off the card for fastest peel to apply time ever!

It's more efficient, safer, thriftier to mark *what* flows *where*—with Brady Pressure-Sensitive Pipe Markers. Off dispenser card in a hurry—on the pipe to *stay* and be *seen* . . . for real savings in material cost and application time. *Background color and legend-overprint combinations meet A.S.A. Standard A-13.* And Brady Markers are Silicone-coated to stay clean, highly visible. A wide assortment of standard markers—or we'll make any kind, with any legend, to your exact order! For *free* samples, useful literature, write—

W. H. BRADY COMPANY
704 W. Glendale Ave., Milwaukee 12, Wis.

BRADY NO. 1 NAME • NO. 1 SOURCE
Pressure-Sensitive Industrial Products

▲ For more details circle **NED-856 C4** on enclosed inquiry slip ▲

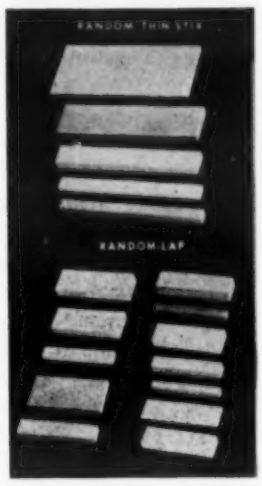
New Processes & Materials

CONVEYOR BELT BREAKER STRIP is nylon/cotton combination

Designed for conveyor belts where severe service is expected as in mining, steel mills, foundries and quarries, Nyton breaker strip is fabricated from both nylon and cotton for strength and resiliency. Nylon is used in the warp or lengthwise direction and cotton in the filler or crosswise direction. The breaker strip, which serves to anchor carcass of belt to rubber cover, is itself imbedded in a soft white rubber compound to make it resistant to severe impact. Made by **United States Rubber Co.,** 1207 Rockefeller Center, New York 20, N. Y.

▲ For more details circle **NED-857 C4** on enclosed inquiry slip ▲

ABRASIVE STONES in various grits, grades and sizes



Oil and dry stones used by toolmakers and for machine and tool purposes are now available packaged in a variety of grits, grades and sizes. Stones are standard aluminum oxide and silicon carbide of vitrified, silicate, shellac and phenolic bonds. Random Thin-Stix come in packages sectionally divided as to grits but not divided as to grades. Stones are about 2 in. long and thicknesses and widths vary from about 0.040 to ½-in. or more. Each package contains about 50 assorted pieces. Random-Lap package is made up of random widths and thickness is approximate 1-in. lengths. Assorted as to grits, stones are for use in power files, reciprocating, filing and lapping tools. Made by **Random Abrasive Co.,** Dept. 108, 449-N Central Ave., Orange, N. J.

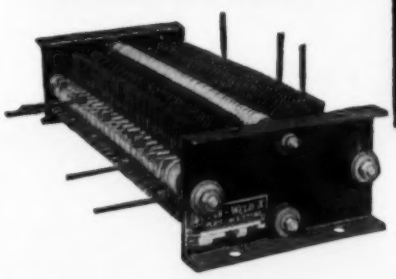
▲ For more details circle **NED-858 C4** on enclosed inquiry slip ▲

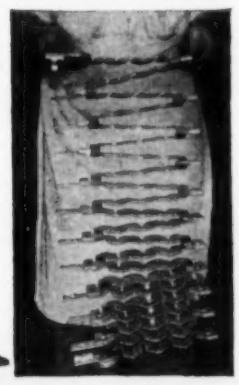
PHOTOCOPYING PAPER can be used in ordinary light

Slow-speed emulsion coated Dri-Stat No. 1 (negative) photocopying paper can be used under fluorescent or incandescent light of fairly high intensity or in subdued daylight. Results are as sharp and clear as those obtained under more favorable conditions with standard papers. Copying job need not be hurried since pre-exposure is not a serious problem. Company also announces availability of Dri-Stat No. 2 (positive) paper in three types. These are standard 95-gram for general use, Duplex 96-gram coated on both sides and a lightweight thin paper. Made by **Peerless Photo Products, Inc.,** Dri-Stat Div., Dept. NED, Shoreham, L. I., N. Y.

▲ For more details circle **NED-859 C4** on enclosed inquiry slip ▲

Low priced yet . . . it includes PREVENTIVE MAINTENANCE





TAB-WELD ▲

◀ TAB-WELD-X

"F.O.B." (FREE-OF-BURNING) Welded Plate Resistors—in continuous capacity sizes—13 to 150 amperes.

For less preventive-maintenance and lower costs, look to EC&M Welded Plate Resistors. Clamping-nut pressure may loosen under alternate heating and cooling, but the welded construction of EC&M TAB-WELD and TAB-WELD-X Sections stabilizes OHMIC values . . . *stops* burning at grid-eyes and at tap-plates. Also, many taps make on-the-job connections easy and readily permit small adjustments in resistance-value.

Write for NEW Bulletin 942

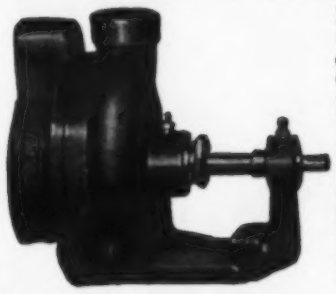
THE ELECTRIC CONTROLLER & MFG. CO.
2698 EAST 79TH STREET • CLEVELAND 4, OHIO

▲ For more details circle **NED-860 C4** on enclosed inquiry slip ▲

FULFLO CENTRIFUGAL **COOLANT PUMPS**

Precision-designed and engineered to do ONE THING and DO IT BEST:

KEEP TOOLS COOL
MAKE THEM WORK BETTER, LAST LONGER



For the machine tool and other industries, FULFLO COOLANT PUMPS play an inestimable part.

Direct, motor or belt driven. Vertical or horizontal installation. Capacities from ¼ HP to 1 HP; pipe sizes from ⅜" to 1½".

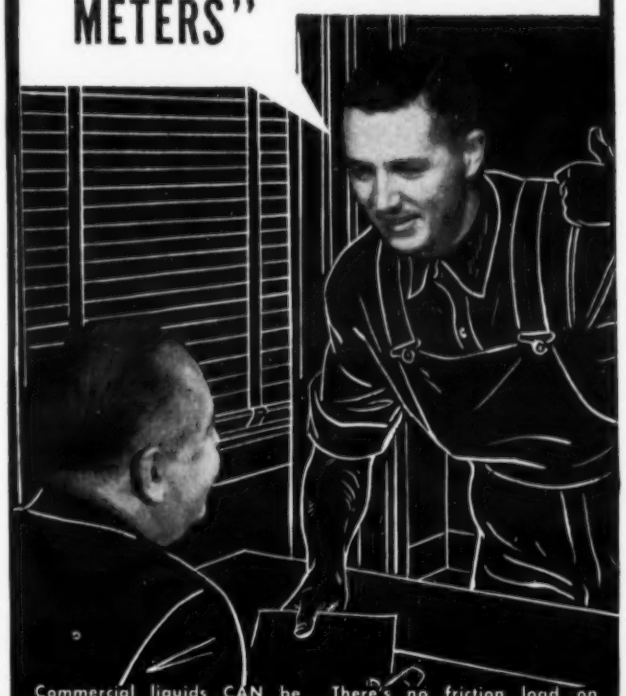
Model FRS4 Right Rotation
Model FLS4 Left Rotation

WRITE FOR PERSONAL COPY—on your letterhead —of FULFLO MECHANICAL DATA BOOK.
Please state if for Pumps, for Valves or for both.

FULFLO THE FULFLO SPECIALTIES CO. Inc.
PUMP AND VALVE MANUFACTURERS
BLANCHESTER, OHIO

▲ For more details circle **NED-861 C4** on enclosed inquiry slip ▲

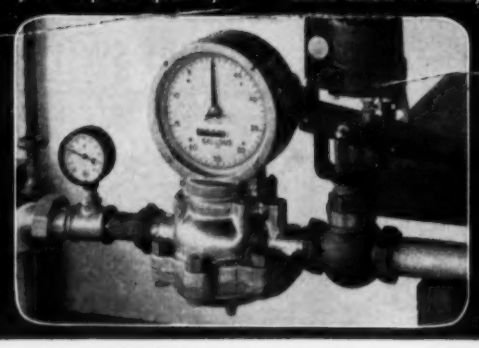
"I save time and get better accuracy in our liquid measurements with NIAGARA Electricontact METERS"



Commercial liquids CAN be measured quickly, simply and positively. NIAGARA Electricontact METERS assure accurate measurements through automatic control. The meter actuates a solenoid valve to stop the flow of liquid after delivery of the preset quantity.

There's no friction load on the meter. NIAGARA METERS replace obsolete tanks and gauge sticks with a sure method of precise measurement.

Send in the Data Request blank below . . . today.



BUFFALO METER CO.
2903 MAIN STREET BUFFALO, N.Y.

Gentlemen:
Please send me complete information on the use of economical NIAGARA METERS, based on the data below:
Liquid_____ Pressure_____ p.s.i.
Temp._____ °F.
Flow rate_____ g.p.m.
Maximum batch_____ gals.
Name_____
Company_____
Address_____

▲ For more details circle **NED-862 C4** on enclosed inquiry slip ▲

NEW! FLORLINE Marking Machine

FOR LINES AT WALKING SPEED—NOW WITH THIRD WHEEL GUIDE FOR FAST, STRAIGHTER LINES AT *NO EXTRA COST!*

- Third wheel 18" forward of carriage keeps machine "on track" long before marking begins
- Guide Wheel arm folds back at curb or wall, lets machine run right up to barrier
- Machine wheels to other areas of work with slight lift of handle
- Makes straight, curved, continuous or skip lines 2, 3 or 4" wide with interchangeable carriages
- Gravity feed, no motor or attachments, heavy gauge metal
- Holds 1½ gallons. Easy to clean and store

$97.50

F.O.B. Detroit
Fully Guaranteed

H.C. SWEET CO.

24396 W. 7 Mile Road
Detroit, Michigan

▲ For more details circle NED-863 C4 on enclosed inquiry slip ▲

Amazing new ELIMSTAT goes on your floors with paint brush or applicator. Gives floors a conductive surface that safely disperses dangerous static currents.

costs only *pennies* a foot

Anyone can apply ELIMSTAT—no special skill needed. Average 2 coat application costs only about *8¢ a square foot.* A test under severe conditions showed ELIMSTAT maintained 200,000 ohms resistance for months. Meets N.F.P.A. requirements. If worn spots do occur, just paint on a new coat at about *4¢ per square foot.* Resists most alkalis, acids. Use on any type floor.

For full details, please write at once. Walter G. LEGGE Company, Inc., Dept. ND-3, 101 Park Ave., New York 17, N. Y. Branch offices in principal cities.

YOU'RE SAFE WHEN YOU HAVE LEGGE TO STAND ON — LEGGE SYSTEM of Safety Floor Maintenance

▲ For more details circle NED-864 C4 on enclosed inquiry slip ▲

Get positive contact dependable service with

STALEY METALLIC MERCURY SWITCHES

- *No switch points to burn, pit or stick!*
- *No glass to break!*

Day in, day out—year in, year out—millions of Staley Metallic Mercury Switches make positive mercury-to-mercury contact . . . give life-long, trouble-free service. Metal cap and body. Refractory breaker shields and de-ionized arc in inert gas. High degree of safety even in explosive atmosphere. Available in two types: Non-insulated for clip mounting. Insulated and provided with flexible terminals. Write today for descriptive bulletin. Specify Dept. NED 405.

ELECTRIC SWITCH CORP.
1304 E. ELEVENTH STREET • COLUMBUS, INDIANA

▲ For more details circle NED-865 C4 on enclosed inquiry slip ▲

New Literature & Catalogs

Flexible Tubing Applications

Pennsylvania Flexible Metallic Tubing Co.—"Penflex Flexineering," the scientific application of flexible tubing for air, oil, steam, gases and volatiles, is explained in 8-page illustrated data book of this title. Uses are depicted for steel, bronze and aluminum tubing and hose; blower and ventilation hose; tar and asphalt hose; tank car hose; diesel piping; marine unloading hose; electric conduit; rivet passers; and barrel fillers.

▲ For more details circle NED-866 C4 on enclosed inquiry slip ▲

Cemented Carbide Products

Kennametal Inc.—72-page catalog 54 is a well-compiled and illustrated piece giving complete specifications and net prices of line of cemented carbide products and tools. Tool blanks, brazed tools, boring tools, mechanically held tools, Kennamills and helical inserts, and dies are covered. Technical data section tabulates physical and mechanical properties, describes Kentanium, offers machining hints and tool wear analysis and illustrates distinctive applications of Kennametal.

▲ For more details circle NED-867 C4 on enclosed inquiry slip ▲

Copper & Steel Products

Continental Copper & Steel Industries, Inc.—Practically all of the products made by the seven divisions of this company are listed in 12-page Purchasing Guide. It gives names of sales personnel and location of all sales offices. Wire cloth and screening; complete plant enquipment; high grade tool steels; insulated wire and cable; high grade alloys; welded pipes, smoke stacks and snow removal equipment; and life boats and equipment are covered.

▲ For more details circle NED-868 C4 on enclosed inquiry slip ▲

Conveyors & Accessories

Samuel Olson Mfg. Co.—36-page illustrated catalog describes light, medium and heavy duty conveyors, belt and live roller units, and powered roller curves; slat, vertical, reciprocating, pusher bar and chain conveyors; as well as suspended tray, book and correspondence types. Pallet dollies, roll stands, ball tables, caster tables and turntables as well as connectors, supports, stands and other accessories are covered.

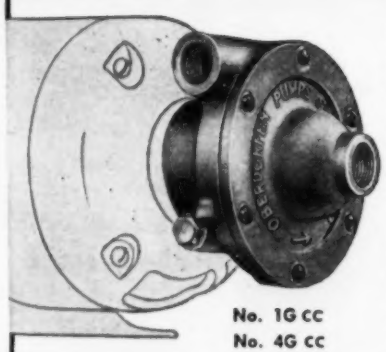
▲ For more details circle NED-869 C4 on enclosed inquiry slip ▲

Plastic Molding Presses

F. J. Stokes Machine Co.—Complete line of presses for fully automatic and semiautomatic molding, for preforming and for extrusion of plastics are subject of descriptive 8-page catalog 525. Specifications are included on 50 and 300-ton models added to this 726-727 series of straight-ram compression and transfer molding presses, and the new 731 series toggle-action compression press.

▲ For more details circle NED-870 C4 on enclosed inquiry slip ▲

Close coupled, centrifugal, motor driven OBERDORFER BRONZE PUMPS



No. 1G cc
No. 4G cc

1G cc is complete motor-pump unit with 1/12 H.P., 3450 RPM, 110 volt, A.C. ball bearing thermal overload motor. Motor frame Nema 42 with end bell machined for pump mounting. Pump has mechanical Rotary face type seal.

4G cc is complete motor-pump unit with ⅓ H.P., 3450 RPM, 110 volt, A.C. thermal overload motor. Motor frame Nema 56 with end bell machined for pump mounting. Pump has mechanical Rotary face type seal.

OVERALL DIMENSIONS—Motor and Pump Unit

Pump No.	Height	Width	Length	Suction	Discharge
1G cc	5"	4¾"	9"	⅜ N.P.T.	⅜ N.P.T.
4G cc	6⅝"	6 5/16"	11¼"	¾ N.P.T.	½ N.P.T.

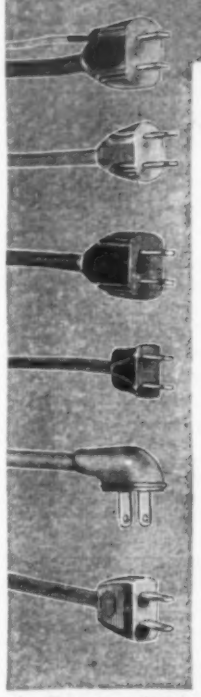
CAPACITIES—Gal. per min.—3450 RPM-Foot Water Head

Ft. Water	0	5	10	15	20	25	30	35
1G cc	7	6½	5	4	1½	—	—	—
4G cc	23	22	20	18	15	12	8	2

Oberdorfer Foundries, Inc., Ind. Pump Div.
243 Thompson Rd. Syracuse, N. Y.

▲ For more details circle NED-871 C4 on enclosed inquiry slip ▲

5 REASONS FOR CALLING... CORDS LTD.
For Cords and Cord Sets



- ★ Fast delivery on cords of standard construction.
- ★ Complete engineering and manufacturing service on cords for special applications.
- ★ Integrated engineering-production control from rod mill to mold department.
- ★ Most comprehensive stock of dies and molds for electronic cords and assemblies in existence.
- ★ Quality proved by use on millions of products.

Write for details, explaining your application

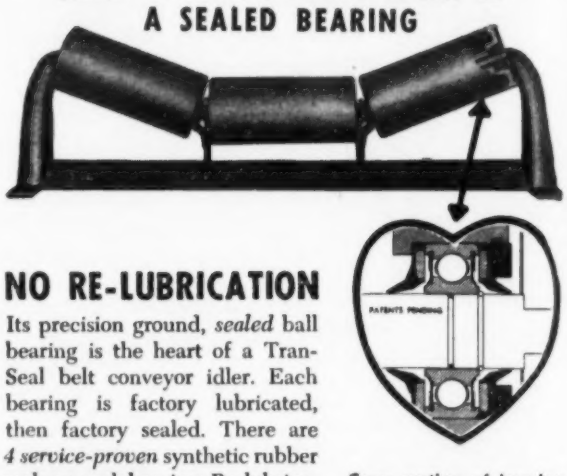
CORDS LTD.
Division of Essex Wire Corporation,
121 DODGE STREET
DE KALB, ILLINOIS

WIRE SX PRODUCTS

▲ For more details circle NED-872 C4 on enclosed inquiry slip ▲

LIFETIME LUBRICATION for BELT CONVEYORS

HEART OF TRAN-SEAL IDLER IS A SEALED BEARING



NO RE-LUBRICATION

Its precision ground, *sealed* ball bearing is the heart of a Tran-Seal belt conveyor idler. Each bearing is factory lubricated, then factory sealed. There are *4 service-proven* synthetic rubber seals on each bearing. Re-lubrication is *never needed.* For details, write TRANSALL, INC., 120 N. 11th St., Birmingham, Alabama.

Cross section of bearing showing 4 seals which keep lubrication in and dirt out.

(120-G)

TRANSALL SECTIONAL BELT CONVEYOR SYSTEMS

▲ For more details circle NED-873 C4 on enclosed inquiry slip ▲

NON-STICKING! TIGHT CLOSING! —no pressure build-up

DAVIS NO. 13
AUTOMATIC PRESSURE REDUCING VALVES

- **FOR MANY USES—** No. 13 regulator designed for reduced flow requirements in heating equipment, vulcanizers, molding presses, steam kettles, etc.
- **EXCLUSIVE DESIGN—** Single seated, tight closing, non-sticking. Large diaphragm, sensitive pressure adjustment. Compact, rugged, self-contained. Orifice type insures high lift, low maintenance.
- **TROUBLE-FREE SERVICE—** Built-in Strainer, finest quality, all internal parts accessible and renewable without disturbing piping.
- **FOR STEAM, AIR OR GAS—** For initial pressures to 250 p.s.i.; reduced pressures, 1 to 100 p.s.i. Sizes from ⅜" to 2". Bronze or semi-steel bodies; bronze or stainless trim. Economical for use on small units.

Write for Bulletin 200

Davis
DAVIS REGULATOR COMPANY
2531 South Washtenaw • Chicago 8, Illinois

▲ For more details circle NED-874 C4 on enclosed inquiry slip ▲

Precision Control At 5000° F.

Model CT-312

PERECO

Carbon-Resistor Type TUBE FURNACE

Developed to meet the demands of both industry and military. Suited for investigations in the ultra-high (3500°—5000° F.) temperature ranges in the field of either metallurgy or ceramics. Wide range of "turn-down" insures very accurate results. May also be duplicated repeatedly. Capable of holding to plus or minus 20° F. at 5000° F. Choice of extremely rapid or any slower cycle heat-up; close control of both temperature and power input, full-range, FAIL-SAFE, safety devices; and easy, low-cost element replacement.

Standard or Special Furnaces or Kilns from 450° F. to 5000° F.

PERENY EQUIPMENT COLUMBUS OHIO

Write for Bulletin

PERENY EQUIPMENT CO.

Dept. G, 893 Chambers Rd., Columbus 12, Ohio

For more details circle NED-875 C4 on enclosed inquiry slip

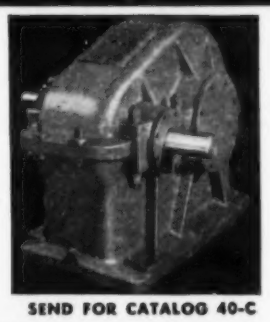
D.O.James Established 1888

Continuous-tooth

HERRINGBONE GEAR SPEED REDUCERS

The Gear With the Backbone

The operating efficiency and dependability of these reducers is continuous testimony to their design and inbuilt qualities of manufacture. They are made in single, double and triple reductions—come in many sizes and in a wide ratio and horsepower range.



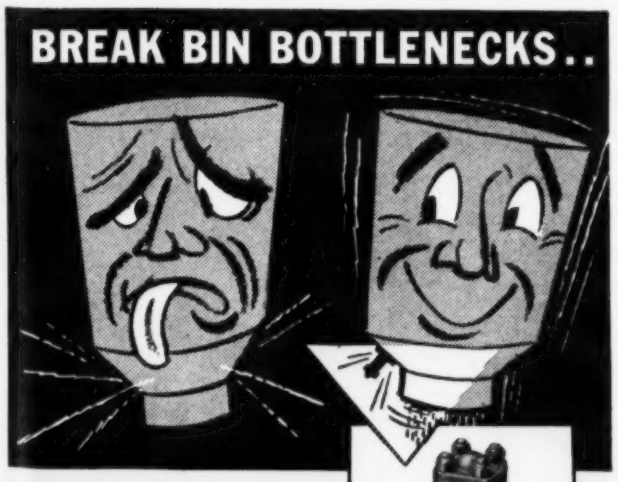
SEND FOR CATALOG 40-C

D. O. JAMES GEAR MANUFACTURING CO.

1140 WEST MONROE STREET • CHICAGO 7, ILLINOIS

For more details circle NED-876 C4 on enclosed inquiry slip

BREAK BIN BOTTLENECKS..



with SPO air vibrators

SERIES 81

For steady flow of powdered and granular materials from bins, hoppers and chutes, specify SPO air vibrators. Key to their superior performance is a special corrosionproof cylinder liner. It assures (1) full-power starting, (2) thorough lubrication, (3) high-speed operation, (4) low air consumption, and (5) long life. Types and sizes to meet every need.

Write for Bulletin 50 for complete details.

1836-51

SPO INCORPORATED

6475 Grand Division Avenue • Cleveland 25, Ohio

For more details circle NED-877 C4 on enclosed inquiry slip

New Processes & Materials

PLASTIC-REINFORCED GLASS CLOTH finds use as photo-template material

Wherever dimensional stability must be maintained in originals, master duplicates and true-to-scale reproductions, as in mapping, tooling, lofting and plane

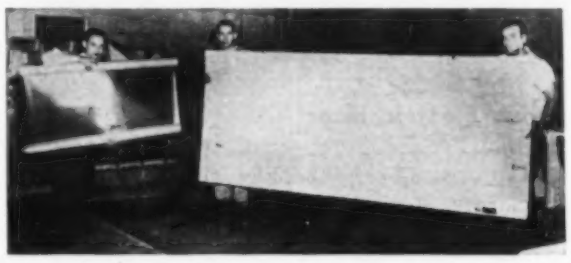
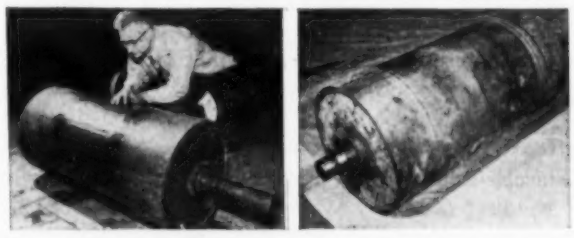


table surveying, plastic reinforced glass fiber cloth is proving practical. This template material also features transparency greater than that of tracing paper. Silver emulsions, Diazo or other usual sensitizing materials can be applied to glass cloth for rapid copying of drawings on metal plates by reflex printing. Material is made in cut sheets up to 60 in. wide, or in 100-yd or longer rolls. Thicknesses range from usual 5½ mils down to 2 mils. In photo, rolled glass cloth reproduction is shown at left in contrast to 4 x 12-ft metal sheet it replaces. Developed by **Tru-Scale Engineering Supply Co.**, Dept. E101, 254 Laura St., Wichita, Kans.

For more details circle NED-878 C4 on enclosed inquiry slip

RUBBER ROLL COMPOUND for rolls used in continuous strip process, eliminates slippage

Slippage and troublesome surface "fogging" of high finish steel strip is virtually eliminated by Strip-Grip nonglazing rubber compound designed for rolls used



in continuous strip processes. Nonglazing feature is integral part of compound and not a surface treatment. It does not wear off, and roll retains gripping characteristics throughout life of cover without frequent roughing or dressing of the surface.

Destructive cover cracks and corrugations are eliminated with compound since high operating pressures, a common cause of failure in roll covers, are no longer required. Compound is available in wide range of durometers, black or tan color and at standard prices. Developed by **B. F. Goodrich Co.**, Industrial Products Div., Dept. E, 500 S. Main St., Akron 18, O.

For more details circle NED-879 C4 on enclosed inquiry slip

PITTSBURGH GAS FIRED UNITS

obtain Accurate, Dependable Temperature Control

WITH

Pittsburgh Gas Fired Unit Heaters, manufactured by the Automatic Gas Equipment Company, Pittsburgh, Pa., are quality heaters designed to give maximum BTU value plus exceptionally long life.

To insure accurate temperature control, Automatic Gas Equipment Company uses Klixon Thermo-Snap Controls in their units.

Here's what Mr. N. L. Blackmore, Sales Manager, has to say about Klixon Thermo-Snap Controls:

"The small limit control, your C-4370, which we use is compact and takes up little space and does a very good job.

We have been using Klixon Controls for over fifteen years and have found them to be very durable and dependable."

What's your temperature problem . . . low and high limit controls, fuel delay switches, tube and rectifier cooling, fan switches, temperature control . . . Klixon Thermo-Snap Controls are meeting the requirements for these and other applications in military and civilian products, daily.

Klixon Thermo-Snap Controls are available in many hermetically sealed and open types in a wide variety of operating temperature ranges.

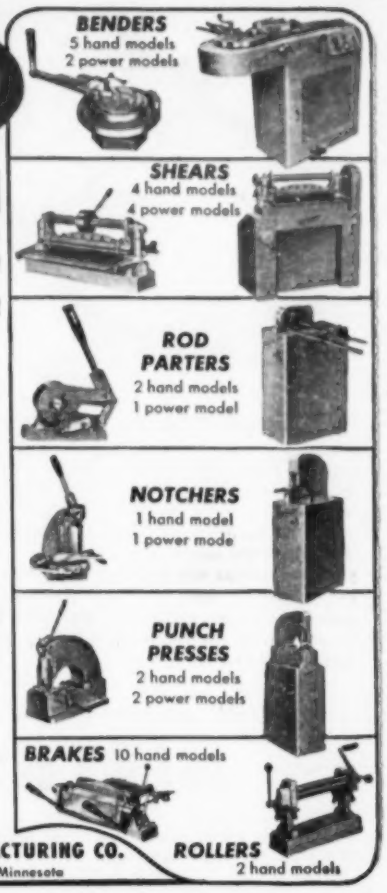
Klixon Engineers, specialists in temperature control applications, can help you solve your specific problems. Write for their help or further information.

METALS & CONTROLS CORPORATION
SPENCER THERMOSTAT DIVISION
1903 FOREST STREET, ATTLEBORO, MASS.

KLIXON

For more details circle NED-880 C4 on enclosed inquiry slip

di-acro PRECISION MACHINES for Die-less Duplicating



NEW CATALOG packed with ideas for making parts by "Die-less Duplicating"—the money-saving, time-saving technique Di-acro created.

BENDING MANUAL gives exact methods for bending processes in a variety of materials. Over 90 diagrams and charts with tooling suggestions.

Sent on Request

See Di-acro Exhibit Booth 1403, A.S.T.E. Philadelphia, April 26-30

O'NEIL-IRWIN MANUFACTURING CO.
354 8th Ave., Lake City, Minnesota

For more details circle NED-881 C4 on enclosed inquiry slip

New HYDRAULIC RAMP makes big savings at your loading docks

Moving Up or Down, the Leva-Dock Ramp keeps on the level with the truck or trailer bed. It compensates 4 ways for varying truck bed heights, out-of-level trucks, spring deflection.

Faster Handling • Less Breakage • Greater Safety
Power trucks move in and out of trucks and trailers faster, in safety, on the LEVA-DOCK RAMP. This hinged, self-leveling ramp positioned by an hydraulic jack fits into your loading dock and becomes part of the dock floor when not in use.

The LEVA-DOCK RAMP eliminates use of steel plates, bridge ramps or slow and expensive methods. Supports 20,000 lb. load in operating position. New automatic safety device prevents accidents and delays.

6 New Models—Lower Prices—Economical operation is by *self-contained electric power unit or compressed air.* Simple to install. Hundreds of dependable Rotary LEVA-DOCK RAMPS now in use are effecting substantial savings in loading costs.

Rotary LEVA-DOCK RAMP®

Mail coupon for complete data and prices

Rotary Lift Co.,
1157 Kentucky,
Memphis 2, Tenn.

Send information on new LEVA-DOCK RAMPS to:

Name.....

Address.....

For more details circle NED-882 C4 on enclosed inquiry slip

LIQUID MATERIALS HANDLING
BLACKMER PUMPS
1904-1954 50th Year
a story of growth
... to be continued

Blackmer's growth has been earned by the development and manufacture of products backed by 50 years of constant laboratory and field research. These products include industrial bulk pumps, truck pumps, hand pumps, strainers and fluid motors. Blackmer's advanced design, smooth operation, economy, and flexibility of use . . . have been performance proved throughout the last half century. Wherever liquids are handled, Blackmer pumps are known for quality, dependability and record durability. And now, new products soon to be announced promise a new standard of performance. Our engineers can solve your liquid materials handling problems . . . write for details today!

liquid materials handling
BLACKMER
Industrial, Hand and Truck Pumps, Strainers, Pressure Control Valves
BLACKMER PUMP COMPANY, GRAND RAPIDS 9, MICH.
DIVISION SALES OFFICES — NEW YORK • ATLANTA • CHICAGO
GRAND RAPIDS • DALLAS • WASHINGTON • SAN FRANCISCO
See Yellow pages for your local sales representative
▲ For more details circle NED-885 C4 on enclosed inquiry slip ▲

Work with latices? sizes? hydraulic fluids?

TEST • STUDY • CONTROL
VISCOSITY
As Simply, Quickly and Easily as Taking Temperature Readings
Use in Lab, Plant -or both
WITH A Brookfield SYNCHRO-LECTRIC VISCOMETER
Adaptable to any problem from less than one to 32,000,000 centipoises. Send for illustrated catalog.

Just a flick of a switch, then read the Brookfield dial, and you have your viscosity determination in centipoises. The whole operation, including cleaning up, *takes only a minute or two.*

Available in a variety of models suitable for extremely accurate work with both Newtonian and non-Newtonian materials, Brookfield Viscometers are portable and plug in any A.C. outlet. *Write today.*

An important manufacturer reports: "The speedy and simple operation of our Brookfield is responsible for savings up to 30 minutes per determination . . . has resulted in much wider use of viscosity control."

Write Dept. O., Stoughton, Mass.
BROOKFIELD ENGINEERING LABORATORIES, INC.
▲ For more details circle NED-886 C4 on enclosed inquiry slip ▲

SAVE 2 WAYS on Chain Drives and Conveyors
This Book Shows You How ▶

With Baldwin-Rex Double Pitch Roller Chain, you save both cost and weight without sacrificing the high quality of standard roller chain. Where speeds are slow to medium, loads are moderate and centers are long, Double-Pitch is often the economical choice.

For all the details on how this precision chain can save you important money and weight, just use the coupon to send for our free Double-Pitch Bulletin.

BALDWIN-REX ROLLER CHAINS

Chain Belt Company 53-409
364 Plainfield St., Springfield 2, Mass.
Please send me Bulletin 51-2.
Name.....
Company.....Dept.....
Address.....
City.....State.....
▲ For more details circle NED-887 C4 on enclosed inquiry slip ▲

New Literature & Catalogs

Industrial Hydraulic Controls

Pantex Mfg. Corp.—Many operating features and characteristics of ¼-in. directly-operated 4-way valves for industrial use are covered in 6-page folder 25. These solenoid controlled units have operating range from 100 to 5000 psi and are interchangeable, mounting and port wise, with many 2000-psi valves. Recommended capacity is 1¼ gpm.

▲ For more details circle NED-888 C4 on enclosed inquiry slip ▲

Applying Electric Heat

Edwin L. Wiegand Co.—"101 Ways to Apply Electric Heat" is 32-page booklet featuring illustrated case histories depicting tested ways to apply metal-sheathed electric heating units in many industrial jobs. Liquid heating with contact-type strip or tubular elements, immersion or circulation heaters, problems of heating air and gases, melting soft metals, and heating machinery and equipment parts are considered.

▲ For more details circle NED-889 C4 on enclosed inquiry slip ▲

Oil & Gas Burner Equipment

Engineer Co.—28-page catalog deals with reference material on industrial oil and gas burner equipment. It includes principles involved in selection and application of various types of burners for utilizing oil or gas or combination of two for either standard range or wide capacity range operation. Conversion table shows relationships between quantity of oil burned, boiler capacity and air required for combustion.

▲ For more details circle NED-890 C4 on enclosed inquiry slip ▲

Mortising, Boring & Routing Tools

Greenlee Tool Co.—Hollow chisels and bits, machine bits and drills, router bits, dowel bits, plug cutters and countersink bits and drills comprise line of mortising, boring and routing tools described in 20-page catalog 34-M. Piece also includes sharpening instructions and a boring chart for wood screws.

▲ For more details circle NED-891 C4 on enclosed inquiry slip ▲

Contract Fabrication Facilities

Gussett Boiler & Welding, Inc.—Plate fabrication and welding facilities available for contract work are covered in 4-page bulletin. Equipment is listed, and materials ranges, scope of fabrication, personnel and design service are also shown.

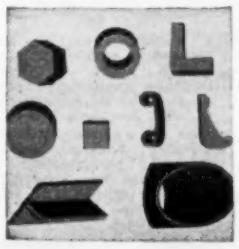
▲ For more details circle NED-892 C4 on enclosed inquiry slip ▲

Casting Impregnation

Polyplastex International, Inc.—8-page illustrated bulletin ". . . the Polyplastex Way" covers impregnation of castings in order to assure density and increase pressure tightness ratings. Process can be used with both ferrous and nonferrous metals and can be adapted to fit particular requirements. It gives pressure tightness from −65 to 350° F.

▲ For more details circle NED-893 C4 on enclosed inquiry slip ▲

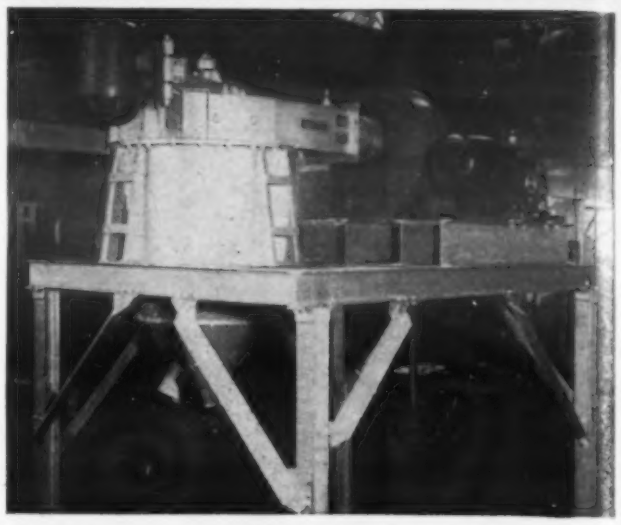
THE CINCINNATI Wet Abrasive Cut-Off Machine



Cut Down ON CUT-OFF TIME!

Cut any metal, solids or tubing fast and accurately! Capacity up to 2-¼" in solids, 3-½" in tubing. Straight or angle cuts up to 45°. And look at these speeds: 2" bar stock in 15 seconds . . . 2" tubing, 3/32" wall, in 10 seconds . . . 2" angle iron, ⅛" thick, 45° angle, in eight seconds. Special features include Cincinnati's exclusive water nozzle, insuring proper coolant flow for longer wheel life; and foot-operated vise, freeing operator's hands for faster production. Write today for Bulletin 54TD.

TRADE The Cincinnati MARK
THE CINCINNATI ELECTRICAL TOOL CO.
Division of THE R. K. LeBLOND MACHINE TOOL CO.
CINCINNATI 8, OHIO
▲ For more details circle NED-894 C4 on enclosed inquiry slip ▲



New Type STURTEVANT Air Separator
Recovers Fines in Micron Ranges

Now the famous Sturtevant Whirlwind Air Separator, so widely used throughout industry for fast recovery of fines, has been specially designed to "pick-off" classified materials such as pigments, limestone fillers, plastics, oyster shells, etc., in micron sizes.

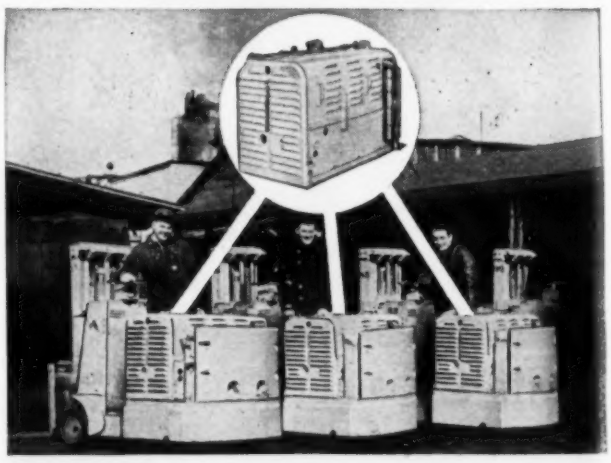
These highly efficient air separators select a continuously uniform product of desired fineness. Used in a closed circuit with grinding mills, they increase production, cut power costs.

Large feed opening, rugged construction, ease of adjustment, low power consumption assure economy of operation and minimum upkeep. Write for further information.

STURTEVANT MILL COMPANY
114 Clayton St., Boston 22, Mass.
▲ For more details circle NED-895 C4 on enclosed inquiry slip ▲

ARO 1000 pound AIR HOIST
SPEED... Lift rate . . . over 40 ft. per minute!
SIZE... Overall length 10¼" weighs only 28½ lbs.
SAFETY... Betters all safety requirements!
Write for full details.
The Aro Equipment Corporation
Bryan, Ohio
Offices in All Principal Cities
In Canada—Aro Equipment of Canada, Ltd. Toronto, Ont.
ARO AIR HOIST
Also . . . Air Tools . . . Lubricating Equipment . . . Aircraft Products . . . Grease Fittings
▲ For more details circle NED-896 C4 on enclosed inquiry slip ▲

Ready-Power is the Only Interchangeable Gas-Electric Power Unit



Interchangeable Ready-Power units allow the most economical system of preventive maintenance known, with *no truck downtime!* One spare power unit permits rotation of maintenance while trucks stay "on the job" . . . an important reason why Ready-Power drive moves materials at lowest cost per ton mile!

Remember . . . Your Truck Is No Better Than Its Power!
CONTINUOUS-DUTY POWER UNITS
The READY-POWER Co.
3832 Grand River Ave., Detroit 8, Michigan
Manufacturers of Gas and Diesel Engine-Driven Generators and Air Conditioning Units; Gas and Diesel-Electric Power Units for Industrial Trucks
▲ For more details circle NED-897 C4 on enclosed inquiry slip ▲

Amazing
FLASH BOX OPENER
Opens Any Carton Quicker . . . Cleaner

Exclusive patented blade holder adjustable to varying thicknesses of carton covers.

THE ONLY CARTON OPENER THAT GIVES YOU ALL THESE ADVANTAGES:

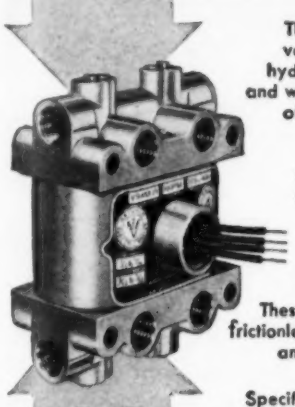
Penetrates exactly under the outer cover thickness • Protects contents of carton • Cuts clearly to permit re-use • Prevents accidents • Saves time • Eliminates fatigue. *Already accepted by leading industries.*

Retail Price **$1.75**

FLASH BOX OPENER CO., Inc.
52 W. Houston St. • New York 12, N. Y.

▲ For more details circle NED-898 C4 on enclosed inquiry slip ▲

SKINNER 4-WAY SOLENOID VALVE
. . . operates double-acting cylinders or 2 single-acting cylinders



These new, smaller Skinner Four-Way valves are leakproof, suitable for air, hydraulic oils and other common media, and will operate in any position. They are offered in 176 standard variations of capacities, metering and types. V9 valves can complete millions of cycles — without maintenance — at speeds up to 600 cycles per minute.

V9 Series valves are available in three basic types: normally closed, normally open, or combination — normally open and normally closed.

These valves are superbly built; packless, frictionless construction eliminate sliding seals and close fits. Bodies are die-cast zinc; internal parts of stainless steel.

Specifications: Pressure Range: 50-150 PSI; Orifice Diameters: 3/64" to 1/8"; Pipe Size: 1/4" NPT. Electrical Outlet: 1/2" NPT conduit; Voltages: continuous duty coils for all common AC, DC voltages.

Guaranteed for 1 year against defects in materials or workmanship. Immediate delivery on stock valves.

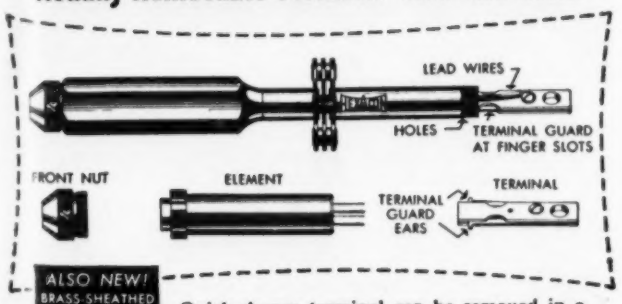
SKINNER V9 SERIES

Skinner ELECTRIC VALVE DIV.
THE SKINNER CHUCK COMPANY
112 Edgewood Ave., New Britain, Conn.

▲ For more details circle NED-899 C4 on enclosed inquiry slip ▲

NOW! **CHANGE SOLDERING IRON ELEMENTS** *IN A JIFFY!*
—with **HEXACON** *Patent Applied For

Readily Removable Terminal* does the trick!



ALSO NEW! BRASS-SHEATHED ELEMENTS Easier to Replace—Better Protection

Write for catalog showing 40 industrial soldering irons of every type and size.

Quick-change terminal can be removed in a second or two, permitting replacement of element in a fraction of the usual time. By simply depressing terminal guard at the finger slots, the terminal comes out in a jiffy — no longer necessary to fish element lead wires around terminal.

HEXACON — Industry's No. 1 Soldering Iron

HEXACON ELECTRIC COMPANY
145 W. CLAY AVE., ROSELLE PARK, NEW JERSEY

▲ For more details circle NED-900 C4 on enclosed inquiry slip ▲

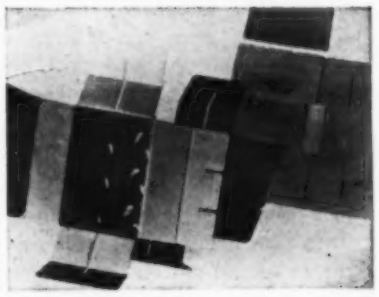
New Processes & Materials

EMULSIFYING CUTTING OIL improvements increase efficiency

Improved Sunoco emulsifying cutting oil now mixes easier with hot, cold and hard water and forms whiter and more stable emulsions. Product's lower viscosity makes it easier to handle, and increased detergency improves its efficiency as a grinding oil. Other applications for which improved oil is practical include use in hot emulsion-type washers, for hot rustproofing, for cold rolling steel and other metal-working operations. Developed by **Sun Oil Co.**, Dept. 34, 1608 Walnut St., Philadelphia 3, Pa.

▲ For more details circle NED-901 C4 on enclosed inquiry slip ▲

PACKING BOX for heavy fragile products



Designed originally for packaging and shipping porcelain insulators, one-piece corrugated paper box also offers improved product protection and handling advantages to manufacturers of other heavy and fragile products. Bottom flaps are folded in and six insulators placed inside the cells thus formed. A die-cut sheet, the only interior packing piece, is then inserted as a support and cushion and the top flaps are folded around six more insulators. The box is then sealed with tape. It is rectangular in shape, lending itself readily to palletization and stacking. Made by **Hinde & Dauch Paper Co.**, Sandusky, O.

▲ For more details circle NED-902 C4 on enclosed inquiry slip ▲

SYNTHETIC RUBBERIZED COATING for metal, concrete, wood surfaces

Metal, concrete or wood surface subject to severe corrosive conditions can be effectively protected with Erchlor 1900 synthetic rubberized coating. Product is compound of chlorinated rubber incorporated with corrosion and chemical-resistant plasticizers and synthetic resins. Resistance to acids, alkalies and corrosive chemicals is exceptionally high. Coating is recommended for use on brown stock washers in pulp mills, pumps, motor bases and similar equipment, and for outside service on cranes, tractors, bulldozers as well as on concrete or wood floors. Special red lead primer is required for outside structures having strong chemical exposure. For exterior equipment a quick drying chromate primer is recommended. Coating is applied by brush or can be thinned for spraying. Coverage is 250 sq ft per gallon. Developed by **Earl Paint Corp.**, Dept. E, 240 Genesee St., Utica 2, N. Y.

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PRECISION MOLDED RUBBER PARTS

Don't let the performance of your products suffer from inferior molded rubber parts . . . parts that are not true to dimension or that do not stand up because of poor quality or wrong compound. Houghton's years of service to equipment manufacturers in supplying synthetic rubber packings are at your service for precision molded rubber parts. Mail the coupon below, or write for information. E. F. Houghton & Co., 303 W. Lehigh Ave., Phila. 33, Pa.

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PHILADELPHIA • CHICAGO • DETROIT • SAN FRANCISCO
Ready to give you on-the-job service . . .

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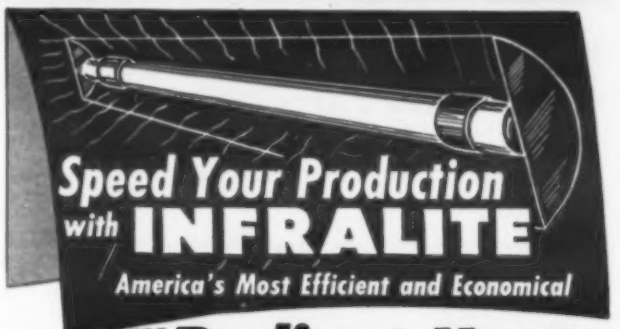

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THERMEX Company, Inc.
535 BERGEN ST., HARRISON, N. J.
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AERO-SEAL WORM-DRIVE HOSE CLAMPS
WON'T SHAKE LOOSE!

Wherever you have to clamp a hose connection tight . . . or wherever you want to lock two objects of any shape together in an unshakeable bond . . . your best bet is AERO-SEAL.

Threads of steel worm engage deep into slots in stainless steel band — hold tight under extreme vibration in automotive, aircraft and industrial applications. CAN'T SHAKE LOOSE.

Use of stainless steel subject to government regulations

One-Hand Installation
Install an Aero-Seal any place you can reach with thumb and one finger. Self-feeding when band engages worm threads. Thumb-grip and screwdriver types.

Re-use Again and Again
When hose is worn you RE-USE the same Aero-Seal again and again. RE-USE Aero-Seals on temporary clamping jobs—they conform to any shape without damaging band.

"Aero-Seal"® WORM DRIVE **HOSE CLAMPS**
ANOTHER BREEZE MARK PRODUCT
BREEZE CORPORATIONS, INC.
41 South Sixth St. Newark, N. J.

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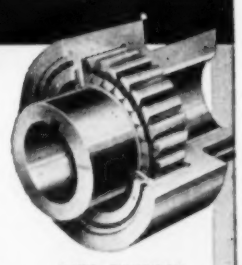
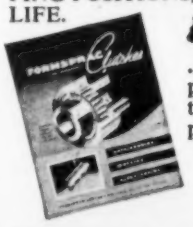
THE FULL COMPLEMENT SPRAG-TYPE CLUTCH

DESIGN ENGINEERS EVERYWHERE ARE SPECIFYING IT

Designers of equipment using over-running clutches are specifying Formsprag Clutches. Because: They've found out what a sprag is . . . What Full Complement means . . . Why that principle provides MAXIMUM TORQUE CAPACITY (for size and weight), INFINITE NUMBER OF GRIPPING POSITIONS, LONGER LIFE.



OVER-RUNNING
INDEXING (Feeding)
BACKSTOPPING



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. . . all the answers on the above plus engineering data, applications, etc. Write for this new 10-page illustrated brochure today.

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Van Dyke, Michigan

FULL COMPLEMENT **FORMSPRAG** *Clutches* DISTRIBUTORS IN PRINCIPAL CITIES

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"Get them from Gillen"

MACHINE KEYS

Standard Gib Head and Plain Taper Keys, Straight and Round End Feather Keys. Precision milled, C-1018 Steel; close tolerances; completely de-burred, ready for assembly.

MACHINE PARTS

Every shape and size; milled, drilled, tapped, countersunk, counterbored, heat-treated, surface ground, from various metals. Used by leading machinery builders. Precision made, rigid inspection.

KEYS • PARTS • PINS

GILLEN GROOVE PINS

Just drill hole, Drive in pin. 3 grooves compress pin for tight fit. Stocked many lengths and diameters. For fast, production fastening. Eliminate threading, tapping, reaming. Various metals and finishes.

TAPER PINS

Straight to taper, ¼" per foot. Extremely accurate. Milled from bar stock; also centerless ground. Rust-resistant coating. Stocked many lengths and diameters.

John Gillen Company
Manufacturers
2562 S. 50th AVE., CICERO 50, ILLINOIS

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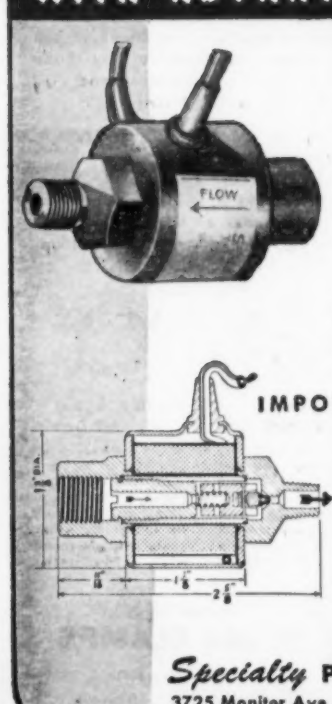
SOLENOID VALVES
WITH ADVANTAGES PLUS



This valve of unique and practical design has proved itself in the past seven years to have extreme endurance and reliability. Important parts are stainless steel and no gaskets are used whatsoever. All parts silver brazed for rigidity. Look no further for a solenoid valve that will give years of trouble free, efficient service. Write today for full information. Samples available for inspection and test.

IMPORTANT FEATURES:

- All brazed construction
- No mounting brackets
- Weight 5 ounces
- Positive seal at any pressure
- Operates in any position
- Operates up to 1000 cycles per minute
- Power consumption 1 to 3 watts
- Pressure up to 200 p.s.i.
- Straight through flow

Specialty PRODUCTS CO., INC.
3725 Monitor Ave. • Minneapolis 16, Minnesota

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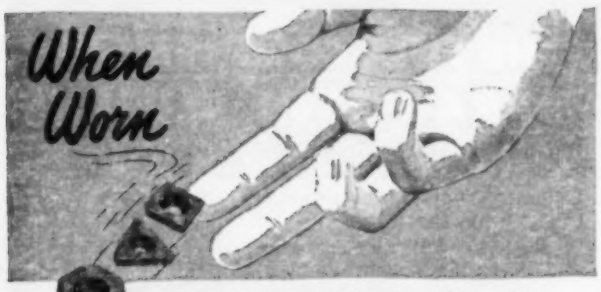

THROW THEM AWAY
... and Save Money

Regrinding of carbide tools—even the best—consumes time and money. It can be a major item in over-all tooling costs. But—there's a way to eliminate this expense entirely on many jobs. Here's how.

The "Kendex" tool needs no regrinding! It has an indexable insert that can be discarded when all its multiple cutting edges become dull.

By the time replacement is required (at slight cost compared to that of regrinds), the insert has already paid for itself by increased productivity, and to discard it is economical practice.

Kendex tools are available in three styles—with round, square, or triangular inserts—as illustrated, and in a range of shank sizes—½" to 1" square.

Perhaps you have jobs on which standard Kendex tools will be suitable—or you may be able to use the standard inserts in conjunction with present tooling. If you desire, one of our Tool Engineers will be glad to assist in working out suitable applications of the "Kendex"* principle to your specific machining problems. Kennametal Inc., Latrobe, Pa.

*KENDEX

KENNAMETAL
CEMENTED CARBIDE TOOLING THAT INCREASES PRODUCTIVITY

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New Literature & Catalogs

Space Saving Work Centers

Alden Systems Co.—"More Dollars for Less Space" is 24-page illustrated booklet that tells how Alden work centers and associated equipment have produced up to 40 per cent saving in space. Basic center is Masonite covered unit which slips into bench type work frame. Frames, also built as units, can be joined to form any number of work centers desired. Applications are practically unlimited, especially in small production and assembly jobs.

▲ For more details circle NED-911 C4 on enclosed inquiry slip ▲

Pressure-Tight Castings

Meehanite Metal Corp.—48-page illustrated bulletin No. 43 is entitled "Meehanite Castings for Pressure Tightness." Sixty-four illustrations show specific applications where specifications demand density, uniformity and resistance to various pressure ranges. Engineering property charts and pressure casting design suggestions are also contained in it.

▲ For more details circle NED-912 C4 on enclosed inquiry slip ▲

Process Control Instruments

Fischer & Porter Co.—20-page illustrated catalog No. 2 covers such process control instruments as flow meters, recorders, controllers, pressure regulators, sight flow indicators and chemical feeders. List and discount prices are contained, in addition to complete specifications. Sizing nomographs for flow meters are also given, covering both liquid and gas service.

▲ For more details circle NED-913 C4 on enclosed inquiry slip ▲

Packaged Automatic Boilers

Orr & Sembower, Inc. — Powermaster packaged automatic boilers in 17 sizes from 15 through 500 hp for steam process as well as steam and hot water heating service are described in 4-page folder. Three-pass design, forced draft and automatic controls are advantages of these boilers designed for light oil, heavy oil, gas or combination gas-oil firing.

▲ For more details circle NED-914 C4 on enclosed inquiry slip ▲

Centrifugal & Turbine Pumps

Aurora Pump Co.—Highlight of 8-page guide and index to current centrifugal and APCO turbine type pumps is selection table which shows gallons-per-minute each pump type will deliver under various head capacities. Supplementary detailed descriptions and photos are given as well. Capacities range from 5 to 7000 gpm.

▲ For more details circle NED-915 C4 on enclosed inquiry slip ▲

Laboratory Instruments

Gardner Laboratory Inc.—Volume 1, No. 1 of the "Newsletter," a new 4-page publication on instruments and laboratory equipment, describes an electronic counting device for the Sward hardness rocker. Other instruments covered include a computer for the Gardner color difference meter, a vacuum plate for wet film applications, a portable hardness tester and a static-removing tool. Issued every 6 weeks, it will be sent regularly upon request.

▲ For more details circle NED-916 C4 on enclosed inquiry slip ▲

Elevator Buckets, Conveying Equipment

Standard Metal Mfg. Co.—Tabulated size, weight and price data pertinent to line of elevator buckets, elevating and conveying equipment are offered in 12-page catalog 100. Only most commonly used styles, sizes and gages are listed. Bucket capacities range from 0.031 to 1.036 cu ft.

▲ For more details circle NED-917 C4 on enclosed inquiry slip ▲

Cast Iron Drainage Fittings

Union Malleable Mfg. Co.—Available sizes, list prices, unit weight, prices and weight per box are among information on line of cast iron drainage fittings found in illustrated catalog. Complete dimensions are given and American standard taper pipe threads are illustrated.

▲ For more details circle NED-918 C4 on enclosed inquiry slip ▲

Hardfacing Alloys

American Brake Shoe Co., American Manganese Steel Div.—Typical applications for line of Amsco hardfacing and build-up rods and electrodes are shown in over 70 photos in a 48-page catalog. Metallurgical and physical properties are included for 4 automatic and 15 manual rods and electrodes. Technical section aids in selection of correct hardfacing rod.

▲ For more details circle NED-919 C4 on enclosed inquiry slip ▲

cut costs · clean efficiently
cold steam

widely used in these industries:
Air Craft, Automotive, Bakeries, Breweries, Cement, Ceramics, Cheese, Construction, Distilling, Electrical, Food Processing, Foundries, Jewelry, Leather, Meat Packing, Machine Shops, Marine, Mining Equipment, Oil & Refinery, Optical, Paper, Pharmaceutical, Public Utilities, Repair Services, Railroad, Rubber, Ship Building, Stone Polishing, Textile, Tobacco, Transportation

✓no back splash
✓blasts stubborn dirt
✓harmless to finest finish

HYDRO-AIR PRESSURE WASHER $9.95

Connects to regular air and hot or cold water supply. Precise control of air and water blasts heavy dirt and grease or rinses sheets and small parts with a penetrating spray.

D & M PRODUCTS, INC.
30 North Raymond Avenue • Pasadena 1, California

Order through your regular supplier of cleaning compounds, or direct.

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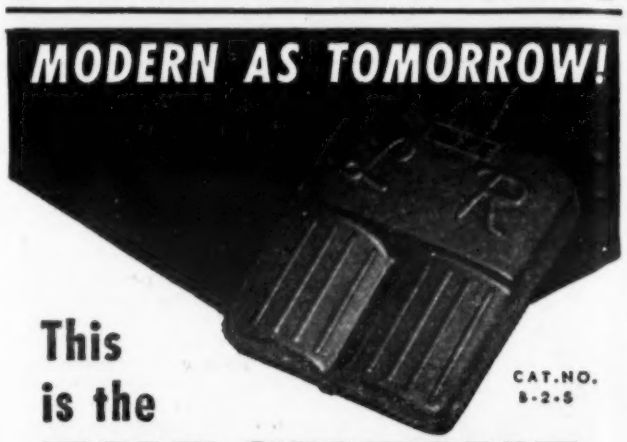
MODERN AS TOMORROW!



This is the **EXECUTIVE** by **LINEMASTER®**
America's Foot Switch Leader

CAT. NO. 5-2-5

PRICE ONLY $6.50 list less discount
Size 4" x 4⅝" x 1¼". Weight 14 ounces

- The Executive incorporates two switches in one, with selective circuits and guaranteed mechanical interlock. Its sleek low-to-the-floor design enables easy and comfortable on-center pivot action; only one circuit can be operated at one time—preventing accidental tripping of two circuits.
- It's the Electrician's dream—only one screw to remove and the switch is ready for wiring.
- Engineers will want to incorporate the Executive by Linemaster into their plans when designing their modern machines.
- Rating (each interior): Single Pole—Double Throw. 20A @ 125V—15A @ 250V

Write for Descriptive Bulletin

LINEMASTER SWITCH CORP.
424 WOODSTOCK TERRACE • WOODSTOCK, CONNECTICUT

▲ For more details circle NED-921 C4 on enclosed inquiry slip ▲

HOW TO **SAVE MONEY** WITH **GRC** SMALL DIE CASTINGS

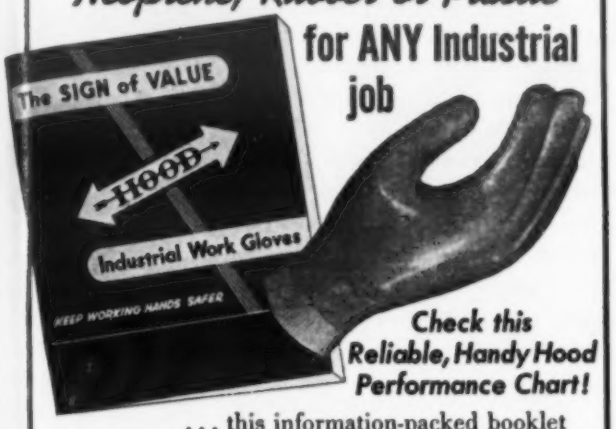
It tells how to: design for GRC small die castings, cast intricate shapes, and involved contours, simplify design, make 1-pc integral castings in place of multiple assemblies, eliminate machining operations. Contains technical data and information for designers and engineers, case histories, and other valuable facts.

GRIES REPRODUCER CORP.
World's Foremost Producer of Small Die Castings
143 Beechwood Ave., New Rochelle, N. Y. • NEw Rochelle 3-8600

▲ For more details circle NED-922 C4 on enclosed inquiry slip ▲

FREE Send for your copy today

Helps you choose the RIGHT Hood Glove — *Neoprene, Rubber or Plastic* for ANY Industrial job



Check this Reliable, Handy Hood Performance Chart!

. . . this information-packed booklet shows comparative wear and chemical resistance of Hood Neoprene, Rubber and Plastic Coated Gloves, and contains illustrations and full descriptions of the complete line of Hood Industrial Gloves — top choice for *every* job in *any* industry.

HOOD RUBBER CO.
Watertown, Mass.

▲ For more details circle **NED-923 C4** on enclosed inquiry slip ▲

6 STEPS to GREATER ABRASIVE SAVINGS

There are 6 important reasons why abrasive blast cleaning costs have hit a new low with the introduction of Wheelabrator Steel Shot. Combining high hardness with long life, this electric furnace steel shot not only cleans faster but lasts longer than other abrasives. It provides greater coverage, insures uniform results and cuts maintenance costs. It has the plus features of 50 lb. carton packaging and palletized shipments to save handling time and storage space. Send today for Bulletin 89-A for the full story.

American WHEELABRATOR & EQUIPMENT CORP. — WHEELABRATOR STEEL SHOT

508 S. Byrkit St., Mishawaka, Indiana

▲ For more details circle **NED-924 C4** on enclosed inquiry slip ▲

ROLL YOUR OWN MARKING LINES

LITTLE GIANT **HANDI-LINER*** THE SPEEDY HAND-OPERATED LINE PAINTER *pat. pending

NEW easy-to-use economical light-weight 5 year guarantee ORDER TODAY

Factories, service stations, warehouses, drive-ins, airports, etc.—save time and money with the Little Giant Handi-Liner. Paints perfect marking lines almost as fast as operators can walk. Sturdy, long lasting. No moving parts to get out of order. Uses any good traffic paint. Used by leading industrial firms, municipalities, garages, U. S. Agencies, etc.

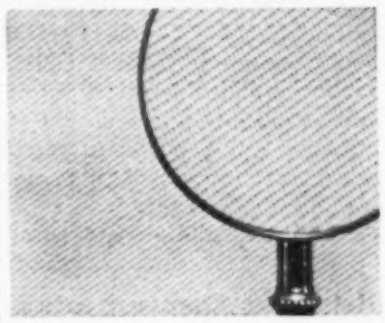
only $32.75 complete F. o. b. Balto. Finest quality high-visibility line-marking paint, 1 gallon cans, 4 cans per case f.o.b. Balto. White $2.95 gal. Yellow $3.20 gal. Red or Orange $3.55 gal.

LASTING PRODUCTS CO., paint manufacturers
BALTIMORE 23 MARYLAND

▲ For more details circle **NED-925 C4** on enclosed inquiry slip ▲

New Processes & Materials

FILTER FABRIC fabricated from polyethylene



Woven from polyethylene monofilaments, Feon filter cloth has a relatively open mesh, somewhat similar to fine wire cloth, and is recommended primarily for free-filtering applications such as coarse crystalline materials or fibrous pulps. Fabric has good resistance against alkalis as well as inorganic acids, and at room temperature, against many organic chemicals as well. It is also tough and abrasion resistant and has good flexing properties even at subzero temperatures. Smooth filaments permit easy cleaning. Made by **Filtration Engineers, Inc.,** Filtration Fabrics Div., 155 Oraton St., Newark 4, N. J.

▲ For more details circle **NED-926 C4** on enclosed inquiry slip ▲

PHOTOCOPYING PAPER reproduces on both sides

Photocopies can be made on both sides of Apeco Duplex copying paper developed especially to work with the Systematic Auto-Stat, a one-unit dry photocopy machine. Paper is made to handle letterhead, legal and book page size copies, as well as larger copies up to 11 in. wide, any length. Any type of paper, documents or originals can be copied, regardless of whether original is on opaque or transparent paper. Made by **American Photocopy Equipment Co.,** Dept. NER, 1920 W. Peterson, Chicago, Ill.

▲ For more details circle **NED-927 C4** on enclosed inquiry slip ▲

WATERPROOFING COMPOUND for walls, floors, other surfaces

Designed for waterproofing and repairing sidewalks, loading docks, ramps, stairways, walls and floors both indoors and outdoors, Victory Resurfacer waterproofing compound can be used either for entire surfaces or for patching. It is mixed with water for use and can be laid without removal or chipping the old surface. It is slip-proof whether wet or dry, has been used to re-line swimming pools and does not soften in strong sunlight. Within 24 to 36 hours after application it is completely dried and cured. Made by **Monroe Co.,** Dept. M-1, 10703 Quebec Ave., Cleveland 6, O.

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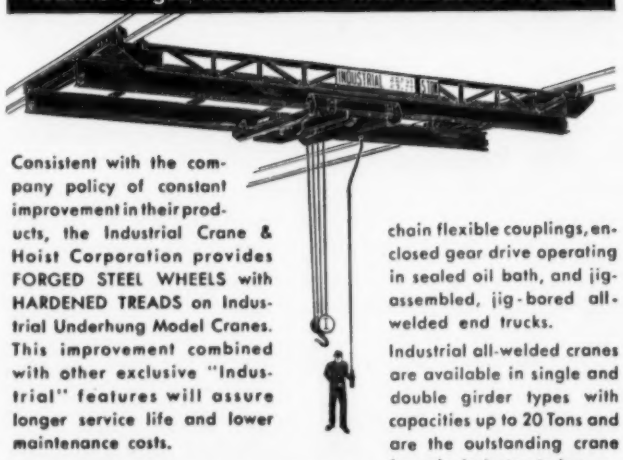
Industrial Underhung CRANES feature Forged Steel Wheels with Hardened Treads



Consistent with the company policy of constant improvement in their products, the Industrial Crane & Hoist Corporation provides FORGED STEEL WHEELS with HARDENED TREADS on Industrial Underhung Model Cranes. This improvement combined with other exclusive "Industrial" features will assure longer service life and lower maintenance costs.

Industrial Underhung Cranes are equipped with patented "Industrial" removable head axles, heavy duty ball and roller bearings throughout, roller chain flexible couplings, enclosed gear drive operating in sealed oil bath, and jig-assembled, jig-bored all-welded end trucks.

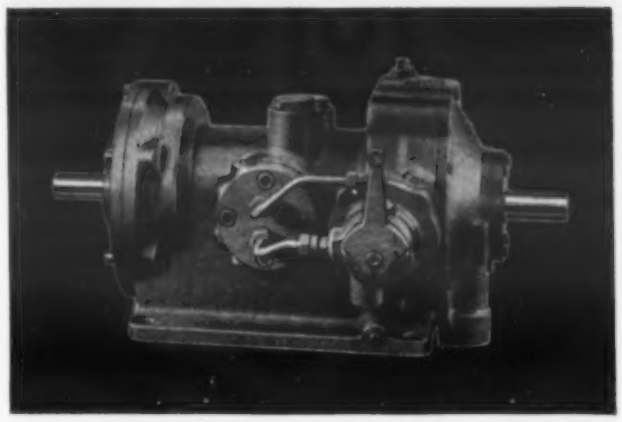
Industrial all-welded cranes are available in single and double girder types with capacities up to 20 Tons and are the outstanding crane buys in industry today.

WRITE FOR CATALOGS

Industrial CRANES

INDUSTRIAL CRANE & HOIST CORPORATION
(formerly Industrial Equipment Co.)
327 NORTH ADA STREET CHICAGO 7, ILLINOIS
Overhead Cranes • Jib Cranes • Monorail Systems • Crane Runways
Representatives in Principal Cities

▲ For more details circle **NED-929 C4** on enclosed inquiry slip ▲



ANY-SPEED OILGEAR FLUID POWER TRANSMISSION Solves drive problems —Improves machine performance

Even machines that lead their fields have benefited greatly by a change to the *ANY-SPEED* Oilgear Fluid Power Transmission . . . simply because top machine performance often depends on a speed flexibility other drives just don't have. The *Any-Speed* Oilgear is *just that*—from zero to 1600 r.p.m. And once you pick your best speed it stays there . . . or until you want to change. Smooth shading of speed all the way up or down. Full control manually, hydro-electrically, pushbutton or automatic remote. Small, durable, dependable, this "power package" installs easily, ends drive trouble, saves power, cuts maintenance to a sliver. Simple, accessible design. Drives off any constant speed source. Write for descriptive Bulletin 67110A. THE OILGEAR COMPANY, 1582 West Pierce St., Milwaukee 4, Wis.

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*DuPont trade-mark for tetrafluoroethylene resin

When you use John Crane Teflon products you get *all* the advantages of this remarkable material—because you get the finest in fabrication "know-how" and quality.

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This 20 page authoritative book on self-priming centrifugal pumps is yours for the asking — no strings attached . . . no obligation.

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HOW TO SELECT STRAPPING TOOLS

● Complete catalog offered by Brainard Steel lists applications of all types of tools and accessories for tensional and heavy-duty steel strapping. Includes specifications; fully illustrated. With the Brainard Strapping System, you can improve efficiency of packaging, carloading, palletizing, bundling, export crating, and warehousing —Brainard's complete line covers over 1000 kinds of strapping, tools and accessories. Get the complete story now.

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STEEL DIVISION
SHARON STEEL CORPORATION

For Catalog write:
BRAINARD STEEL DIVISION
Griswold Street, Dept. HH-3.
Warren, Ohio

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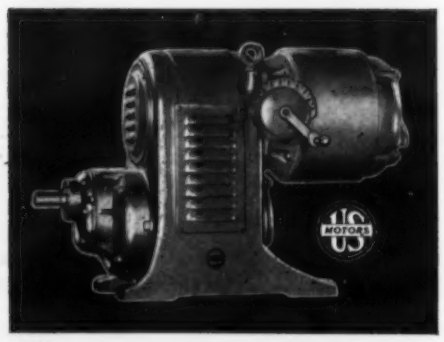
THOUSANDS OF PLANTS NOW GETTING THOUSANDS OF SPEEDS



Miracle Motor

ANY RPM BY DIAL CONTROL

Get more production out of your present machines by powering them with U. S. Varidrive motors. No extra space required. Thousands of plants are profiting with this miracle motor. Turning a simple control handle changes speed of the Varidrive to any desired r.p.m. in ratios up to 10:1. Operators can instantly select the speed best suited for the work.

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Occupies little more space than a single speed motor. ¼ to 50 hp, 2 to 10,000 r.p.m.

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Box 2058, Los Angeles 54, Calif. or Milford, Conn.
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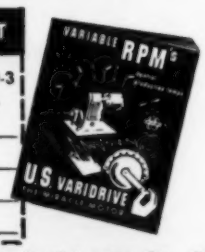
COMPANY_____
ADDRESS_____
CITY_____ZONE____STATE_____



▲ For more details circle NED-934 C4 on enclosed inquiry slip ▲

New Literature & Catalogs

Electrical Connectors

Cannon Electric Co.—Type E multicontact electric connectors are covered in 12-page illustrated bulletin AN-E-1. They are available with either polychloroprene or silicone insert materials and have cadmium plated exteriors with chromate finish of dull olive drab. They are designed to conform with specification MIL-C-5015A as regards dielectric strength, water repellency, resistivity, corrosion resistance and are unusually light.

▲ For more details circle NED-935 C4 on enclosed inquiry slip ▲

Hot-Water Storage Heaters

Patterson-Kelley Co.—48-page illustrated catalog No. 18 pictures and describes complete line of hot-water storage heaters including horizontal, vertical and low-flow designs. Linings available include copper, copper-silicon, cement, clad and galvanized types. Piping diagrams are given for high and low pressure systems, together with a step-by-step installation guide. Ordering information is included, with data showing how requirements can be calculated.

▲ For more details circle NED-936 C4 on enclosed inquiry slip ▲

Sealing Compounds

Presstite Engineering Co.—20-page illustrated catalog covers complete line of sealing compounds used in manufacture of automobile bodies and mobile homes. Body sealers, elastic compound tapes, mastic compounds, spotweld sealers, cobwebbing sealers and rubber adhesives and barrier papers are among the types covered. Each compound is described in detail, with information on characteristics, specific uses and application techniques.

▲ For more details circle NED-937 C4 on enclosed inquiry slip ▲

Time Delay Relay

Elastic Stop Nut Corp. of America, AGA Div.—Pneumatically-controlled two-step NET Agastat time delay relay illustrated and described in bulletin SR4 is designed to introduce either a sequence of time delay periods or a momentary impulse into an electrical circuit. It is available with single-pole double-throw or double-pole double-throw contacts, either with the time delay beginning when the circuit is energized or when it is de-energized.

▲ For more details circle NED-938 C4 on enclosed inquiry slip ▲

Carbide Drills

Super Tool Co.—Metal cutting carbide tipped and solid carbide drills are subject of illustrated circular No. 541. Complete size and net price data are given on all items. Regular spiral type has a heavy web with special tip grind to reduce chip interference. Others shown include fast spiral, straight flute and hardened steel cutting drills.

▲ For more details circle NED-939 C4 on enclosed inquiry slip ▲

Photoelectric Controls

Autotron Co.—Photoelectric controls catalog describes variety of components including general purpose; "fail safe"; high speed and ultrasensitive controls. Others include controls with electronic timers and safety relays. Light sources are available with straight, pin-point and adjustable focus beams and with beam intensity adjustment, dual filament lamps and safety relays.

▲ For more details circle NED-940 C4 on enclosed inquiry slip ▲

Valve Installations

Hamer Oil Tool Co.—Comprehensive instructions on installing line blind valves are contained in 24-page manual, which is illustrated with many cartoon-type drawings. Section covers trouble-shooting for faulty installation techniques along with recommended correction procedures. Data contained can be equally well applied to installation of gate, globe and plug valves.

▲ For more details circle NED-941 C4 on enclosed inquiry slip ▲

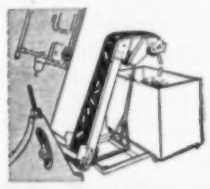
Industrial Cork Products

Dodge Cork Co.—Natural cork and cork composition industrial products are subject of 4-page illustrated folder S-54. Physical characteristics of both types of product are discussed, and typical applications are illustrated. These include handles, plugs, glazing strips, fuel system floats, gaskets and seals and clutch and brake facings. Government and SAE-ASTM equivalents as well as sheet sizes and thicknesses are listed.

▲ For more details circle NED-942 C4 on enclosed inquiry slip ▲

NEW RAPISTAN MP MAGNETIC CONVEYOR for high volume handling of small parts or scrap

For "tight space" handling of any ferrous scrap or small parts, this new Rapistan unit is unusually adaptable to press-room operations. Magnetized bed attracts material to center, eliminating need for guards. Operates at inclines up to 72 degrees to save space. Magnetic attraction ends at top, permitting materials to fall into tote box. Pressmen, freed of handling chores, can resume full time production. The new Rapistan MP Magnetic Parts & Scrap conveyor is particularly suited to handling scrap, nails, slugs, production parts, strip stock, cold forgings, etc. Simplified construction holds cost considerably below that for nearest competitive unit. For full information, specifications and prices, write direct to:



The RAPIDS-STANDARD CO., Inc.
222 Rapistan Building
Grand Rapids 2, Michigan

Rapistan BETTER CONVEYING EQUIPMENT

▲ For more details circle NED-943 C4 on enclosed inquiry slip ▲

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RESISTANCE
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RECORDER

✳*Ideal for measurement of temperatures up to 600°F.*
✳*Inherent accuracy ± 0.5% of Full Scale*
✳*Linear scale on all spans up to 600°F.*
✳*Recorder has interchangeable measuring unit which permits change in range or measurement without rewiring. Up to 4 simultaneous inputs permit addition, subtraction or averaging.*

This new, low-cost Fielden self-balancing type recorder uses an AC actuated bridge circuit that eliminates direct current source and replacement of dry cells. Measures spans of 50°F. or less if required. Full scale pen travel in 3.5 sec. Sensitivity ±0.5% of full scale, dead spot 0.1% of full scale. Recorder adaptable to many uses. Write today for detailed information to Dept. F.

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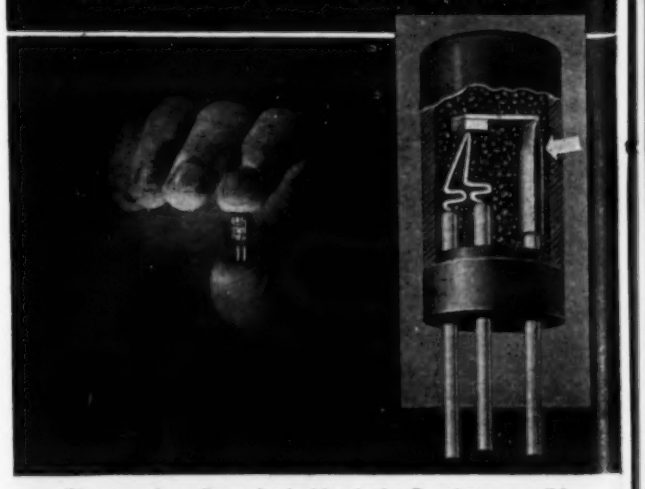
INSTRUMENT DIVISION
ROBERTSHAW-FULTON CONTROLS COMPANY
2920 N. 4th St., Philadelphia 33, Pa.
Dollar for Dollar—Your Best Instrument Value

▲ For more details circle NED-944 C4 on enclosed inquiry slip ▲

SMALL TUBING—BIG NEWS ...THAT'S THE TRANSISTOR



Top news in radio and television is the Transistor—possible successor to many vacuum tubes.

The Transistor shown above is made by CBS-Hytron, division of Columbia Broadcasting System, Inc. The L-shaped crystal support is formed from Superior seamless nickel tubing. It's .032" I.D., .003" wall, .193" long with a 90° bend. CBS-Hytron relies upon Superior close tolerances and formability for this fussy small-tube application. Why don't you? Superior Tube Company, 2018 Germantown Ave., Norristown, Pa.

Superior THE BIG NAME IN SMALL TUBING

All analyses .010" to ⅝" O.D.
Certain analyses in Light Walls up to 2½".

▲ For more details circle NED-945 C4 on enclosed inquiry slip ▲

Hanna Fast-Acting Electrically Operated AIR CONTROL VALVES

★ up to 500 cycles per minute
★ packless-balanced spool type
★ low current consumption

Hanna Electrically Operated Air Control Valves are pilot operated for low current consumption. Single solenoids with spring return may be push button actuated—require only 1/60th second for reversal. Double solenoid models are actuated by momentary contact, capable of 500 cycles per minute. Lines may be connected to bottom, sides, or a combination of both.

Hanna 4-Way Solenoid Valves . . . Available in ⅛", ½", ¾" and 1" sizes . . . Featuring optional piping connections.

SEND FOR FREE HANNA VALVE CATALOG No. 254 CONTAINING COMPLETE DETAILS AND SPECIFICATIONS

Hanna Engineering Works

HYDRAULIC AND PNEUMATIC EQUIPMENT . . . CYLINDERS . . . VALVES . . . RIVETERS

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▲ For more details circle NED-946 C4 on enclosed inquiry slip ▲

OSBORN

The Osborn line of industrial brushes is complete . . . designed by the Company that knows Industry's problems. Left to right: Osborn paint brush, varnish brush, duster, chip brush.

Tools for cutting manhours . . . two ways

WHEN you specify OSBORN Brushes, you save manhours these ways: (1) You eliminate shopping around, *cut purchasing red tape*, by standardizing on OSBORN for all brush needs. (2) The worker saves time because efficient OSBORN Brushes get his work done *faster*.

They are backed by 61 years of OSBORN service to Industry. You can buy them automatically with confidence. *The Osborn Manufacturing Company, Dept. Z-15, 5401 Hamilton Avenue, Cleveland 14, Ohio.*

FREE POCKET CATALOG. *This new handy catalog describes OSBORN Brushes of all kinds. Write for your free copy.*

Osborn Brushes

OSBORN MAINTENANCE, PAINT AND POWER BRUSHES • BRUSHING METHODS • FOUNDRY MOLDING MACHINES

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STOP Scaling and Corrosion

A CHEMICAL TREATMENT APPLIED LIKE PAINT

WHAT IT DOES

PROTECTS AGAINST . . .

- Corrosion and Scaling at high temperatures up to 1850°F.
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- Alkalies
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FOR FREE TEST SAMPLE — Write outlining your intended use, giving kind of metal, corrosive conditions and approximate minimum and maximum temperatures.

Markal COMPANY
3053 West Carroll Avenue • Chicago 12, Illinois

▲ For more details circle NED-948 C4 on enclosed inquiry slip ▲

New Processes & Materials

ALUMINUM ROOFING
lightweight, is 0.024-in. thick

Lightweight corrugated aluminum roofing and siding material is 0.024-in. thick and is designed for use where narrow beam spans in the roof support structure permit use of a less strong material than standard 0.032-in. type. Recommended design loads vary from 17.1 lb per square ft where purlin spacing is 7 ft 6 in. to 78.7 lb per square foot with purlin spacing of 3 ft 6 in. New covering has ⅞-in. deep corrugations and a 2.67-in. pitch, identical to the thicker product. Fasteners and erection methods are identical for both types. Use of lightweight type results in substantial materials economies. Made by **Aluminum Co. of America**, 805 Alcoa Bldg., Pittsburgh 19, Pa.

▲ For more details circle NED-949 C4 on enclosed inquiry slip ▲

SYNTHETIC RUBBER CAULKING
extremely stable, resists solvents

When activated with addition of easily mixed catalyst, D-46 synthetic rubber caulking compound, supplied as a black paste of heavy viscosity, will cure at room temperature. Resulting cured coating is a flexible rubber which will not shrink and has excellent adhesion to any clean metal, wood, concrete or glass surface. Product is nonshrinking and practical for sealing and filling cracks, for expansion joints or repairing tanks and conduits. Cured film resists water, sun, oils, gasoline and dilute acids. It retains flexibility at −65° F and does not soften in hot weather. It also can be used at temperatures to 250° F. Developed by **Connecticut Coatings, Inc.**, 45 E. Putnam Ave., Greenwich 5, Conn.

▲ For more details circle NED-950 C4 on enclosed inquiry slip ▲

HEAT RESISTANT PAINTS
in metallic red and blue

Now available in metallic red and blue in addition to standard aluminum and gold, Heat-Rem high heat resistant paints withstand temperatures up to 1700° F without blistering or flaking. They are compounded from aluminum flakes in a silicone base, can be applied by brush or spray, and air dry in about 30 minutes. Illustration shows spray painting of a barbecue oven for protection against rust and corrosion. Made by **Speco, Inc.**, Dept. RSA, 7308 Associate Ave., Cleveland 9, O.

▲ For more details circle NED-951 C4 on enclosed inquiry slip ▲

METAL EMULSION CLEANERS
sprayed on to remove oil, grease

Line of seven emulsion cleaners offer a simple spray-on method of removing grease and oil from metals and machinery. Added in small amounts to petroleum solvents, they increase the penetrating power of the solvents, speed the cleaning action and improve rinsing properties. Included in line are light, medium and heavy duty materials for cleaning aircraft surfaces; automotive parts; use in industrial spray washing machines; precleaning prior to spray-on acid cleaning; removal of asphaltic soils, heavy grease, crater compound and other soils associated with tank cleaning; and extra heavy duty cleaner for removing bituminous materials, paraffin waxes, gilsonite coatings and other heavy soils. Chart is available with specific uses, maximum and minimum dilution ratios, diluents used, methods of application, flash points and safety factors of each. Made by **Turco Products, Inc.**, Dept. E-7, 6135 S. Central Ave., Los Angeles 1, Calif.

▲ For more details circle NED-952 C4 on enclosed inquiry slip ▲

CHICAGO TRAMRAIL

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FASTER HANDLING *at less cost*

- 360° Swing • Self-Supporting
- Capacities from ½ ton to 5 tons
- Complete Line of Pillar, Mast and Wall Type Jib Cranes

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OVER HEAD CRANES • STAK-RAK CRANES
MONORAIL SYSTEMS AND RACKS

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B.F.Goodrich

FREE TWAF TIRE AND WHEEL ANALYSIS can lower over-all tire costs as much as 50%

Savings of as much as 50% on industrial tire costs have been reported by users across the country through the use of the B. F. Goodrich Tire and Wheel Analysis Plan! Tire maintenance costs have been reduced 20% and more! This free analysis plan can save *you* money, too. Merely contact your local BFG retailer or mail the coupon below. Without cost or obligation, a trained B. F. Goodrich man will study your materials handling operations. He will tell you what type and size tires, what tread design and compound will serve you best.

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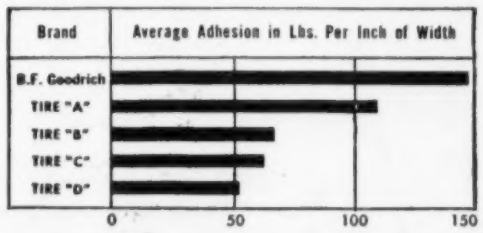
AVOID TIRE FAILURES LIKE THIS. Poor adhesion of rubber to steel caused this tire to fail prematurely. The chart below, based on extensive comparison tests of leading makes of tires, proves the superior adhesion qualities built into BFG solid industrial tires.

Tests Prove B. F. Goodrich Adhesion Best



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☐ Free copy of "Industrial Tire Guidebook"
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Specify B. F. Goodrich tires when ordering new equipment

RESEARCH KEEPS B.F.Goodrich FIRST IN RUBBER

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LARGE: Aluminum die-castings made on large cold-chamber type, high pressure machines. Large zinc die-castings made on large plunger type machines.

SMALL: Zinc die-castings, 1000 per lb. to 3 per lb. High-speed *automatic* machines. More design latitude... attractive tool costs, piece prices.

SEND PRINTS OR SAMPLES FOR QUOTATION —engineering advice at no obligation

Literature on request

DOLLIN CORPORATION, 612 So. 21st Street, Irvington 11, N. J.

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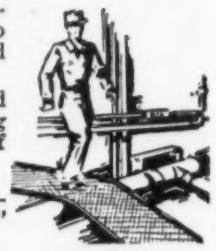
with **Bustin** FIRM-GRIP SAFETY GRATING

Bustin FIRM-GRIP* grating guarantees safe, comfortable walking under the most adverse conditions where grease, oil or water can cause accidents from slipping.

FIRM-GRIP is acclaimed by Safety Engineers of major industrial concerns for its exceptional traction quality and other safety features due to the unique assembly and engineered spacing of the contact points.

Made in various designs and sizes and adaptable for installation on skidding problem spots where other makes of gratings cannot be considered.



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Bustin FIRM-GRIP GRATING CORP.

Dover, New Jersey

*Pat. Pending

Send for Complete Literature

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WRITE TODAY for literature showing applications, types, prices.

E. W. PIKE & COMPANY, Inc.

492 NORTH AVENUE ELIZABETH 3, N. J.

▲ For more details circle NED-957 C4 on enclosed inquiry slip ▲

New Literature & Catalogs

Point-Contact Transistors

Amperex Electronic Corp.—30-page bulletin 204 deals with two types of point-contact transistors, one of which (type OC 50) is for general amplifying purposes and the other (type OC 51) for switching applications. Major portion of piece is devoted to description of transistor operation in amplifier circuits, followed by typical examples of transistor oscillator and switching circuits.

▲ For more details circle NED-958 C4 on enclosed inquiry slip ▲

Precision Potentiometers

Helipot Corp.—Linearity and loading effects in analog systems are examined in 8-page technical paper "Computing with Servo-Driven Potentiometers" which also shows how errors can be eliminated. Practical circuit techniques are discussed, including restriction of potentiometer range, preloading, and unloading with feedback amplifiers.

▲ For more details circle NED-959 C4 on enclosed inquiry slip ▲

Die Casting Machines

Cleveland Automatic Machine Co.—The two smallest high pressure hydraulic die casting machines in this company's line are described in 4-page folder with full specifications. Model 50 is for aluminum, brass or magnesium alloys. Change of hot metal end equips machine for casting zinc, tin or lead. Model 100, for zinc, tin or lead, can likewise be converted to cold chamber machine.

▲ For more details circle NED-960 C4 on enclosed inquiry slip ▲

Remote Bulb Thermometers

Minneapolis-Honeywell Regulator Co., Industrial Div.—44-page catalog 6709 on remote bulb thermometers for indicating, recording and controlling covers selection data, recorders and indicators, pneumatic control, electric control, program control, psychrometers, bulbs, tubing and fittings. These instruments afford an accurate means of measuring and controlling broad variety of industrial process temperatures and are especially valuable in range from −125 to 1000° F.

▲ For more details circle NED-961 C4 on enclosed inquiry slip ▲

Rolling Mills & Related Equipment

Farrel-Birmingham Co.—More than thirty sizes and types of rolling mills for nonferrous rod, strip or sheet; metal foil and cold strip steel are pictured and informatively captioned in 36-page bulletin 273. Booklet describes mills, gear drives, pinion stands and rolling mill handling equipment. Mills range in size from 30 x 36-in. breakdown type to 6 x 6-in. self-contained machine for laboratory experimental work.

▲ For more details circle NED-962 C4 on enclosed inquiry slip ▲

Pipe & Fin Coils

Rempe Co.—Revised second edition of "Engineering Data Book" on pipe and fin coils contains vital information for design engineer and plant superintendent. Data cover design and calculation of pipe and fin coils, heat transfer coefficients for heating or cooling, factors for computing fin coil surfaces, recommended materials for heating or cooling, heat transfer factors at various air velocities and Btu load limitations for cooling coil circuits.

▲ For more details circle NED-963 C4 on enclosed inquiry slip ▲

Remotely Controlled Four-Way Valve

Pantex Mfg. Corp.—Advantages of line of remotely controlled ¾-in. pilot operated four-way valves are explained in 6-page illustrated bulletin No. 57. Pressure range is from 100 to 5000 psi. Main valve will operate with any noncorrosive free-flowing fluid with sufficient lubricating property to assure proper spool function. Spring offset, no spring and spring centered types are made with bottom or side-ported subplates.

▲ For more details circle NED-964 C4 on enclosed inquiry slip ▲

Pressure Gages & Accessories

Manning, Maxwell & Moore, Inc.—One of the most comprehensive catalogs ever produced on pressure gages, gage accessories and gage engineering data is this Ashcroft gage catalog of 124 pages. Sections cover chemical gages and attachments, industrial application gages, Navy and Marine gages, laboratory and pocket test gages, gage testers, mercury column pressure and vacuum gages, barometers and gage accessories.

▲ For more details circle NED-965 C4 on enclosed inquiry slip ▲

"Maverick" usually spells trouble, to the production line as well as the open range. An unknown quantity, its performance and quality are questionable. For all solder products, there's never any doubt when you choose Kester ... the one "brand" that's always consistent, always dependable.

YOUR FREE COPY of the Kester Technical Manual, "SOLDER and Soldering Technique," is waiting for a letter or a card. Won't you WRITE TODAY?

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SOLDER COMPANY

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FREE

HOW MOTOCYLINDERS SPEED AND SIMPLIFY MATERIAL HANDLING

Turn to this book for a better way to push, flip, raise, lower and release material. Fully explained are the revolutionary thrust techniques of Westinghouse Motocylinders. See how these compact drive units give you greater precision and economy together with far less maintenance than your present material-handling method. The simplicity of Motocylinder installation and operation is clearly shown ... no steam or hydraulic systems involved.

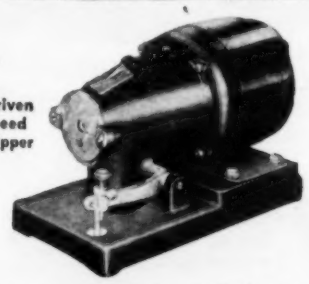
Included are thrust diagrams, torque curves, control arrangements, rating charts and important construction features of the Westinghouse Motocylinder.

Write today for your copy of B-6090 and learn how motions can be put to more practical use with Motocylinders. Address your request to: Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-07339

YOU CAN BE SURE... IF IT'S Westinghouse

▲ For more details circle NED-967 C4 on enclosed inquiry slip ▲

Over 3,000 Strips Per Hour with HIGH SPEED WIRE STRIPPERS



Completely removes any type of insulation (including new plastic types) from solid, strand or multi-conductor cable up to ½" diameter. Stripping lengths up to 1½". Works instantly ... easy to use ... simple to adjust. Three exclusive circular cutters center cable for accuracy and give more and sharper cutting edge. Comes with ¼ H.P. 110-volt single phase AC motor, cord, switch and plug. Cut production costs with HIGH SPEED.

Costs only $132.50 F.O.B. Rochester, N. Y.

Write for detailed illustrated free literature on lower cost production wire stripping.

HIGH SPEED HAMMER CO., INC.

Manufacturers of HIGH SPEED Wire Strippers, Cold Rivetors, Staking Machines and Precision Drilling Machines.

315 E. NORTON ST., ROCHESTER 21, N. Y.

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To obtain additional information on any items in this issue of NEW EQUIPMENT DIGEST, circle numbers below which correspond with those of the desired items. Your request will be forwarded promptly to the manufacturer. Please give your name, title, company and address. This postage-free mailer should be folded as indicated for mailing.

	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150
1	51	101	151	201	251	301	351	401	451	501	551	601	651	701	751	801	851	901	951	1001	1051	1101	1151
2	52	102	152	202	252	302	352	402	452	502	552	602	652	702	752	802	852	902	952	1002	1052	1102	1152
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19	69	119	169	219	269	319	369	419	469	519	569	619	669	719	769	819	869	919	969	1019	1069	1119	1169

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20	70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120	1170
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49	99	149	199	249	299	349	399	449	499	549	599	649	699	749	799	849	899	949	999	1049	1099	1149	1199

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C-4

NAME ..... TITLE .....

COMPANY .....

ADDRESS .....

CITY ..... ZONE ..... STATE .....

Principal Products Manufactured .....

..... Approx. Number of Employees in Plant .....

Check Invested Capital Rating of Your Company

- ☐ Over $1,000,000
- ☐ $500,000 to $1,000,000
- ☐ $200,000 to $500,000
- ☐ $75,000 to $200,000
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Although the PEDRICK PRODUCTION BENDER shown is bending two "D" sections simultaneously for sliding board rails—the same machine is used for bending pipes, tubes, reinforcing bars and structural shapes, by merely changing the die on the central spindle. Most bends can be made in multiple. The automatic duplicate bending feature, included on all models, greatly increases accuracy and production.

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VISIT OUR BOOTH #1442
AT THE PHILADELPHIA A.S.T.E. SHOW
APRIL 26 TO 30, 1954

PEDRICK TOOL & MACHINE CO.
3640 N. Lawrence St. Philadelphia 40, Pa.

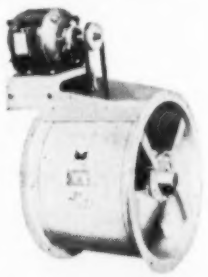
▲ For more details circle NED-969 C4 on enclosed inquiry slip ▲

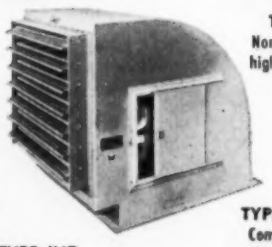
GET THE FACTS...

. . . and forget the problems! Without obligation, a Chelsea ventilating engineer will survey your plant—tell you *exactly* what type and size fan should be installed in every problem location.

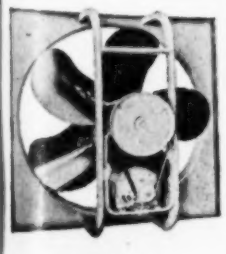
You'll get all the facts you need for a decision!

CHELSEA FANS...





TYPE PLDX
Non-overloading for high static pressures



TYPE IND
For normal ventilation.

TYPE PH
Complete penthouse unit.

The fans shown above are only a few of the many Chelsea models—each in a variety of sizes and capacities . . . Your request will bring a complete detailed catalog plus the name of your local Chelsea industrial distributor.

Every Chelsea fan has "Certified Ratings". You can depend upon accurate, carefully calculated air deliveries exactly as advertised.

CHELSEA FAN & BLOWER CO., INC.
PLAINFIELD, NEW JERSEY
MANUFACTURERS OF INDUSTRIAL VENTILATING EQUIPMENT

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New Processes & Materials

PARTS LOOSENING SOLVENT in pressurized can, squirts 3 ft

Kroil chemical solvent for loosening frozen bolts and parts is now available in 12-oz pressurized cans which permits user to shoot a stream of solvent up to 3 ft. Thus, a lineman clinging to a pole can squirt solvent on frozen bolt with one hand. Can may also be kept in work kits without danger of leaking. Kroil is harmless to metal, has pleasant odor, will penetrate into space of one-millionth of an inch, softens rust and dissolves dried grease and oil. Made by **Kano Laboratories,** 1074 S. Thompson Lane, Nashville 11, Tenn.

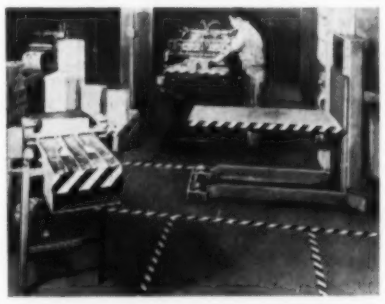
▲ For more details circle NED-971 C4 on enclosed inquiry slip ▲

OPALESCENT PAINT with aluminum base, in 7 colors

Use of Alcoa aluminum in Opal-Glo, an opalescent interior wall coating, permits the metal's optical properties to achieve depths and tones of color without the metallic sheen usually noted with aluminum finishes. Paint is offered in seven shades—gray, rose, aqua, chartreuse, blue, green and brown—and has 50 per cent light reflectivity, even with deeper colors. Other features include durability, ease of cleaning and up to 1000 sq ft per gallon coverage. Application can be in a conventional manner, or by stippling with roll, brush or crushed paper to obtain almost unlimited surface and tonal effects. Made by **Sherwin-Williams Co.,** Dept. E, 101 Prospect Ave. N. W., Cleveland 1, O.

▲ For more details circle NED-972 C4 on enclosed inquiry slip ▲

HAZARD-MARKING TAPE is self-adhering and highly visible



Temporary or permanent marking of any industrial hazard or location can be made with Hazardstrip pressure-sensitive tape. It is available with a cloth backing for indoor use, with a vinyl backing for outdoor use and where oil and gasoline are present, and with bright reflective backing for marking backs of all types of vehicles. Tape is bright yellow and black and is furnished in rolls 2 in. wide. Stripe widths are 1½ in. wide for normal use and 3 in. wide where larger areas need to be covered. Tape resists moisture, dirt and grime, and will remove without scraping or scrubbing. Made by **Western Lithograph Co.,** Westline Products Div., 604 E. Second St., Los Angeles 54, Calif.

▲ For more details circle NED-973 C4 on enclosed inquiry slip ▲

INDUSTRIAL ADHESIVE bonds wide range of materials

A high bonding ability for metal-to-metal, metal-to-nylon, as well as aluminum, steel, brass, copper, glass and nylon adhesions is featured by Phenoweld thermo-setting industrial adhesive. Consisting of highly adhesive reactive resins in a solvent, adhesive is applied by brush, spray or dip to both parts. When solvent is evaporated, adhesive is tack-free, and remains so. Parts to be assembled are held together under gentle pressure, producing an effective bond that is especially practical with wood and thermoplastics where time and high temperature cannot be tolerated. For bond with maximum chemical and solvent resistance, application of heat while parts are held together is recommended. Product has good electrical properties, is nontarnishing and finds use in production of loud speakers, electronic coils and wiring equipment. Formulated by **H. V. Hardman Co.,** 571 Cortlandt St., Belleville 9, N. J.

▲ For more details circle NED-974 C4 on enclosed inquiry slip ▲

BEST DEFENSE AGAINST CORROSION

Start with **TYGORUST**

"the no-prep vinyl primer"

- minimizes surface preparation
- brushes easily—sprays beautifully
- dries hard in 5-15 minutes
- covers up to 500-600 sq. ft./gal.
- goes under any type finish
- adheres to wet or dry rusted steel, to wood, to concrete, or to previously painted surfaces.

Finish with **TYGON "Series TP" PAINT**

"the vinyl finish of maximum protection"

- easily applied by brush or spray
- fast drying and non-oxiding
- fully flexible and chip-resistant
- non-flammable when dry
- easy to clean and long lasting
- resists fumes and spillage of acid, alkalies, oils, greases and water.

Write for full details—ask for Bulletin 720!

360 C

U. S. STONEWARE CO.
AKRON 9, OHIO

▲ For more details circle NED-975 C4 on enclosed inquiry slip ▲

ROCKFORD CLUTCHES

ROCKFORD CLUTCHES are factory, field and road tested to make sure they will stand up under the torque, shock load, engagement frequency and duration, slippage, reversal, etc., required by the machines in which they are to operate. Because of this exacting on-the-job application, down-time for clutch adjustments or repairs has been reduced to a minimum. Let ROCKFORD engineers help you get more work time from your machines.

ENGINEERING MAKES IT WORK... PRODUCTION MAKES IT AVAILABLE

Send for This Handy Bulletin

ROCKFORD CLUTCH DIVISION BORG-WARNER
312 Catherine Street, Rockford, Illinois, U. S. A.

▲ For more details circle NED-976 C4 on enclosed inquiry slip ▲

CUT IT OUT!

Cut what out?

any KEYWAY in any of your gears, milling cutters, pulley hubs, collars, couplings — *any* size from 1/16" to 1", in *any* bore from ¼" to 3"

Cut it out *fast* — sixty seconds per keyway

Cut it out *cheap* — as little as 1¢ per keyway

CUT OUT THIS COUPON
Also See
DEMONSTRATION
Booth 235
A.S.T.E. Show

The du MONT CORPORATION, Greenfield, Mass.
MAIL ME FREE CATALOG and PRICE LIST on Minute Man Keyway Broaches and Kits D

Name.....
Company.....
Address.....

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More and More Distributors are carrying the

SMITH CAM FOLLOWER

WRITE FOR NAME OF DISTRIBUTOR NEAREST YOU

This unique Cam Follower has an integral flange on the stud, making it possible to increase stud diameter up to 100% greater in relation to the size of the cam roller. *No other cam follower can do this.* This assures extra strength where high speed and heavy load-carrying capacity are essential.

A Snap Ring, which retains the roller, fits in behind the solid, integral flange. IT CANNOT BE PUSHED OUT.

SMITH BEARING CO.

STATION N, P. O. BOX 1119, TRENTON, N. J.

▲ For more details circle NED-981 C4 on enclosed inquiry slip ▲

a new catalog....

on **FISHER/TAG**

AND OTHER PETROLEUM TESTING EQUIPMENT

This new catalog completely describes the comprehensive line of Fisher/Tag and other petroleum testing equipment and provides a ready reference to important petroleum tests.

All the petroleum testing apparatus represented in this catalog for conducting tests outlined by the American Society for Testing Materials are in exact accordance with their specifications. When methods or specifications change, the necessary alterations are made to meet the latest ASTM specifications.

There are a great many testing instruments and apparatus for the petroleum industry available today. Know all about them through this very useful new free catalog.

WRITE DEPT. FF FOR YOUR FREE COPY!

FISHER SCIENTIFIC

717 FORBES ST. PITTSBURGH 19, PA.

▲ For more details circle NED-982 C4 on enclosed inquiry slip ▲

modernize materials handling with

CARGOTAINERS®

Cargotainers are designed to keep pace with modern methods of materials-handling because they are: 1. Sturdy and resistant to shock; 2. Readily folded when not in use; 3. Open mesh so that contents may easily be seen for quick inventory; 4. Efficiently designed for shipment, assembly line use, and vertical storage. Write for information concerning the new CLEARVIEW model with its exclusive base construction for greater durability and better locking and stacking. Dept. NED, Pittsburgh Steel Products Co., Grant Bldg., Pittsburgh 30, Pa.

Pittsburgh Steel Products Company

A Subsidiary of Pittsburgh Steel Company

▲ For more details circle NED-983 C4 on enclosed inquiry slip ▲

New Literature & Catalogs

Bench Type Mills

Barker Engineering Co.—Milling, profiling, drilling, key seating, end milling, straddle milling, slotting, turning, facing, counterboring and recessing can all be done on Barker bench type mills described in 4-page form BM 9-53. Supplementary form briefly describes special accessories for these mills.

▲ For more details circle NED-984 C4 on enclosed inquiry slip ▲

Safety Treads & Thresholds

Wooster Products, Inc. — Complete variety of treads and threshold products and the metal in which they are available are shown in 12-page catalog 54. Treads and thresholds provide wear-resistant and antislip walking surfaces for stairs and walkways. Accessories such as plates, curb bars, window and elevator sills are covered as well.

▲ For more details circle NED-985 C4 on enclosed inquiry slip ▲

Measuring Surface Roughness

Micrometrical Mfg. Co.—Operating feature of the Profilometer, an instrument for measuring surface roughness, are depicted in 8-page bulletin LT89. It tells how this instrument is used in the shop for production and quality control, often where surface roughness in itself is not the main consideration, and shows typical applications in well-known plants.

▲ For more details circle NED-986 C4 on enclosed inquiry slip ▲

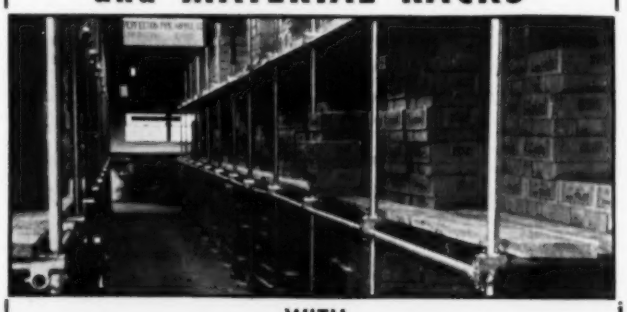
Lift Truck Fuel Additive

Towmotor Corp.—How Towmotor additive for gasolines used in industrial lift trucks dissolves and removes engine carbon, gum and varnish is told in this informative folder. It coats engine surfaces with a microscopic protective film to which gum and carbon will not adhere. Results of performance tests are related.

▲ For more details circle NED-987 C4 on enclosed inquiry slip ▲

MAKE YOUR OWN

ADJUSTABLE SCAFFOLDS and MATERIAL RACKS



WITH

AMIDON FITTINGS

AND STANDARD PIPE

THE MOST ECONOMICAL

AMIDON ENGINEERING CO.

ELYRIA 20, OHIO

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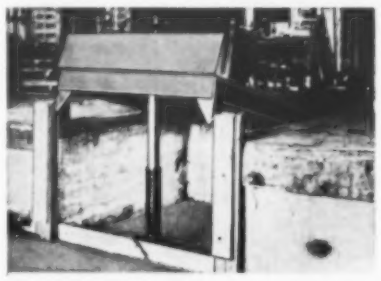
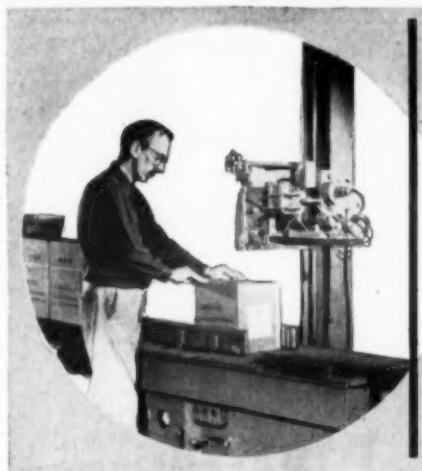
HYDRAULIC LOADING RAMP speeds trucking job



Quickly adaptable to varying truck heights — this CEMCO Hydraulic Dock Ramp is finding favor with men who have much to load or unload and too little time. It can be raised or lowered hydraulically —through a total travel of 24". (12" above dock and 12" below; or, 14" above and 10" below, etc.) Central hydraulic system supplies up to 14 units. Available in 7' or 8' lengths and in widths from 5 to 8 feet. Capacity: 5 tons or 10 tons. Ramps are fitted with a bridge plate which locks in vertical position when not in use. Full engineering service to help you plan your dock ramp needs. Send for folder and prices. **CEMCO Industries, Inc.,** Galion, Ohio. —*Advt.*

▲ For more details circle NED-989 C4 on enclosed inquiry slip ▲



International Stapling Machine saves $20,000 a year for UARCO

Uarco, Inc., Chicago manufacturer of business forms reports a savings of more than $1600 a month with an International Retractable Anvil stapling machine.

The stapler, a double-headed, air operated model priced at only $3400, is used to close filled cartons from the outside, top and bottom simultaneously. Daily volume is 2,500 cartons of varying sizes . . . in a 12 hour period.

International Stapling Machines will save you as much as 50% on shipping costs . . . write for additional details.

INTERNATIONAL STAPLING MACHINES

INTERNATIONAL STAPLE & MACHINE COMPANY
802 East Herrin Street, Herrin, Illinois

▲ For more details circle NED-990 C4 on enclosed inquiry slip ▲

CUTS METAL 15 TIMES FASTER THAN HAND HACK SAW!

***New* Porter-Cable PORTABLE Band Saw**

Slices through 1½" cold rolled steel in 41 seconds! You can take this 16-pound work-demon anywhere . . . equipment yards, stock bins . . . tight spots where costly hand sawing is the only other answer!

Powered for heavy duty, perfectly balanced. *Band speed:* 240 feet per minute. *Capacity:* 3¼" diameter round stock, 3¼" x 4¼" rectangular. *Bearings:* top grade precision ball and needle. Tough aluminum alloy frame. *Motor:* Universal 115 V. AC-DC, 25-60 cycle (230 V also available).

- 10 to 15 Times Faster than Hand Sawing!
- Cuts Ferrous and Non-Ferrous Metals and "Problem" Materials
- Use It in Any Position with Ease and Safety!

WRITE TODAY for full information on Porta-Band Portable Band Saw

PORTER-CABLE MACHINE CO.,
2403 N. Salina St.,
Syracuse 8, N. Y.

Porter-Cable
Quality Electric Tools

Manufacturers of SPEEDMATIC and GUILD Electric Tools

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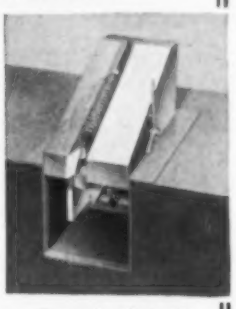
Eliminate the Major Cause of FAILURE of Your Electric Products

Insure the Quality of the Connections



Example of simple mechanized stripper designed for a specific job.

Most failures of electric equipment are due to faulty connections. If the end of the wire is not absolutely clean, or if it has been nicked or reduced in diameter, that connection will probably fail.

The human element is one contributing factor — make-shift stripping equipment is another. What you need is mechanized stripping equipment, designed for the specific operation, which does a uniform, complete, damage-free stripping job every time — and which also usually results in lower costs.

You can't buy such equipment from a catalog — it must be designed for your specific operation. That is our specialty. Send samples and complete details. It won't cost you a cent to find out what can be done to solve this costly problem for you.

Rush Wire Stripper Div.
The Eraser Co., Inc., Syracuse 4, N. Y.

▲ For more details circle NED-992 C4 on enclosed inquiry slip ▲

MODERN *air fluid* POWER

BV SERIES VALVES
¼ INCH PORTS 3 WAY & 4 WAY

• FOOT CONTROL MODEL—SAME PEDAL AND BASE FOR 3 WAY & 4 WAY VALVES

- SINGLE AND DOUBLE CAM STEM MODELS
- TYPES: CAM—SPRING RETURN—PILOT PRESSURE ACTUATION—PRESSURE RESET.
- CONTROL FEATURES: SINGLE & DOUBLE CAM—SINGLE & DOUBLE ROLLER CAM—HANDLE—FOOT PEDAL—PALM BUTTON.

WRITE FOR CATALOG
STOCKS IN PRINCIPAL CITIES

CYLINDERS
CONTROL VALVES
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All components required for complete automatic and sequence circuits:

Engineering of control circuits

SERVICE ENGINEERING SALES

Modernair CORPORATION
TRADEMARK
400 PRADA STREET • SAN LEANDRO, CALIFORNIA

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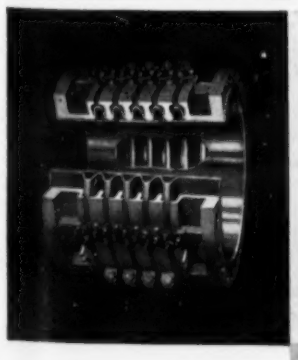

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Zallea

DUO-EQUALIZING EXPANSION JOINTS

Request Bulletin 351.

ZALLEA BROTHERS
818 Locust Street
Wilmington 99, Delaware

World's Largest Manufacturer of Expansion Joints

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New Processes & Materials

VENTILATING SASH
shatterproof and weatherproof

Ventilating sash is glazed with Fiberglas-reinforced translucent panels which are shatterproof and weatherproof and is available in ten sizes with either aluminum or steel frames and in projected or pivoted units. Called Reso-lite-vent, it is packaged-type unit which can readily be installed in conjunction with standard siding materials. It is so constructed that practically no metal is exposed to the weather and has large ventilating area. Glazing in all eight standard Resolite colors is available, but the plant daylighting colors such as pale green, ice blue and semi-clear are recommended. Made by **Resolite Corp.**, Dept. D-2, Zelienople, Pa.

▲ For more details circle NED-995 C4 on enclosed inquiry slip ▲

V-BELT
has high horsepower capacity

Reported to provide 40 per cent greater horsepower capacity on existing drives, the R/M Super-Power V-belt is also said to feature longer life than standard belts. On new drives, narrow sheaves can be used, saving space as fewer belts are required for the same power demands. Synthetic rubber belt has practically no stretch, simplifying matching. It is oilproof, nonsparking and heat resistant. Other performance characteristics are the same as for company's Condor V-belt. Made by **Raybestos-Manhattan, Inc.**, Manhattan Rubber Div., 61 Willet St., Passaic, N. J.

▲ For more details circle NED-996 C4 on enclosed inquiry slip ▲

ALL-PURPOSE ADHESIVE
can also be protective coating

Quick-setting and heavy bodied Placco 1000 all-purpose adhesive shows excellent performance in applications where heavy fixtures must be fastened to smooth wall surfaces. Under test, a 2-in. square bond withstood pull of over 300 lb at 300° F. More specific applications include fastening to wood, masonry and metal such items as hangers for wire, pipe and conduit; nailing strips; electrical wiring fixtures; and all types of wall boards and flooring materials as well as ponderous slate blackboards. Product adheres to porous and nonporous surfaces with equal facility. It can also serve as protective coating because it is waterproof, heat and weather resistant, flexible, corrosion resistant, noninflammable, nontoxic, gives off no fumes and will not contaminate foodstuffs. Developed by **Pioneer Latex & Chemical Co.**, Dept. L, Lincoln Blvd., Middlesex, N. J.

▲ For more details circle NED-997 C4 on enclosed inquiry slip ▲

IMPREGNATED LEATHER PACKING
addition of rubber increases life

Long life and low friction of leather as a packing material are combined with the nonporosity, high resiliency and heat resistance of synthetic rubber in VIM 1243 type 3 rubber-impregnated leather packing. Developed for high pressures and temperatures and light oils and fluids now used in hydraulic systems, the packing is a preset, precured material with high dimensional stability. It will serve at temperatures up to 200° F and as low as −65° F. Operable pressure range is 0 to 15,000 psi. Leather fibers are impregnated throughout with synthetic rubber, bond being accomplished by a polymerization process. Made by **E. F. Houghton & Co.**, 305 W. Lehigh Ave., Philadelphia 33, Pa.

▲ For more details circle NED-998 C4 on enclosed inquiry slip ▲

nylon
MAINTENANCE PARTS...
FAST...without mold costs!

Now, when you need maintenance parts fast...and these parts call for the advantages of nylon (light weight, wear resistance, heat and corrosion resistance)—you can make them quickly, *with no mold cost!*

POLYPENCO nylon standard shapes are the answer. Ideal for gears, bushings, bearings, insulating shafts, washers, etc. Available in rod, strip, tubing. Easily fabricated on standard metal working tools. Quick delivery from stock. Write for bulletin, listing technical information or prices. The Polymer Corporation of Pennsylvania, Reading, Penna.

POLYPENCO® NYLON

nylon and teflon* / stock shapes...finished parts
also available to your specifications

In Canada: Polypenco, Inc., 2052 Saint Catherine, West Montreal, P. Q.

* registered trademark of the Du Pont Company

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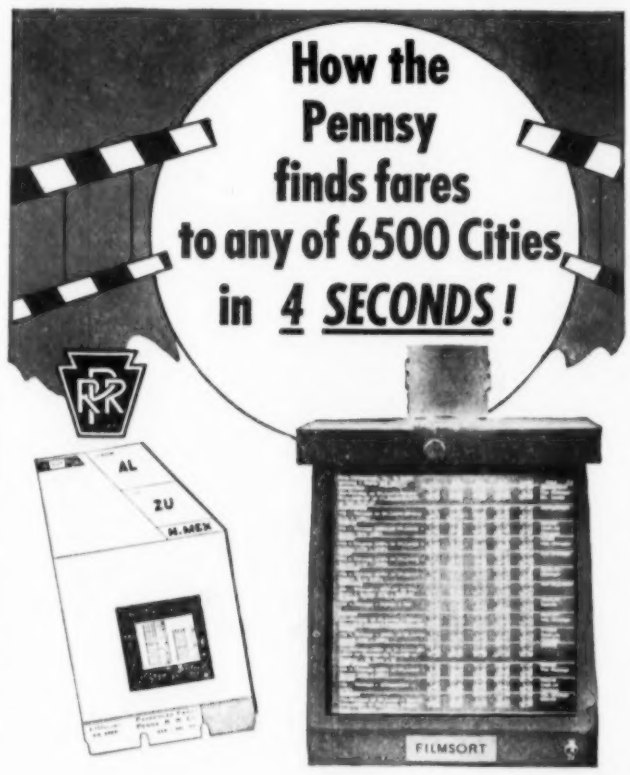

In just four seconds, Filmsort gives a Pennsylvania Railroad ticket representative in Pittsburgh the exact fare to any of 6500 cities.

A whole book of railroad fare information is condensed into but 150 Filmsort-VISIrecord cards with each card having a frame of microfilm that lists more than 45 points.

Concentrated, easily accessible information—that's the Filmsort method. And what Filmsort is now doing for the PRR can easily be adapted to your record-keeping problem.

With Filmsort, you mount microfilm in cards—IBM, Remington Rand, McBee Keysort, VISIrecord or just plain index cards. Your Filmsort cards are filed in any sequence, easily revised and kept-up-to-date.

When management needs a method—the choice is Filmsort. Ask your Filmsort representative to show you how you can save time—space—money.

Start now by writing Filmsort for full information on how to solve record-keeping problems. No obligation of course.

Filmsort INC.
PEARL RIVER, NEW YORK ®

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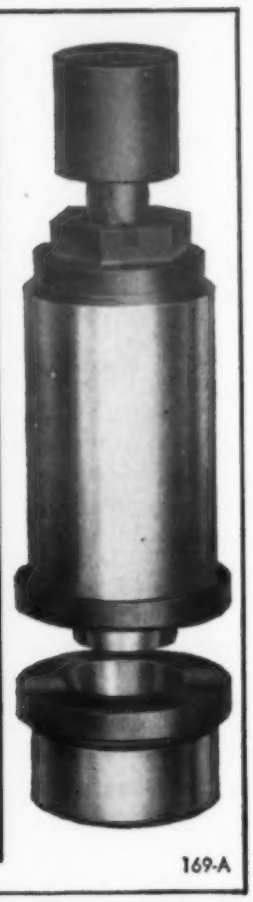
STANDARDIZED UNIVERSAL INDEX PLUNGERS

save time, save money

Save the time and expense of designing and machining special plungers for multi-station tools with Universal Index Plungers. They greatly simplify jig and fixture manufacture because plunger body and bushing have same diameter—all holes can be bored with same tool, often in same setting. Soft pin knob, hardened and ground locating bushing, plunger and plunger bushing. Straight and Taper Plungers in standard sizes, complete, ready for installation at approximately ¼ the cost of specially made plungers.



UNIVERSAL ENGINEERING COMPANY
FRANKENMUTH 5, MICHIGAN

169-A

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YOU CAN BE SURE.. IF IT'S Westinghouse

FREE to D-C motor users

HERE ARE TWENTY PAGES OF FACTS ON THE LIFE-LINE SK D-C MOTOR. THIS BOOK SHOWS WHY AND HOW NEW DEPENDABILITY HAS BEEN ADDED TO THE WELL-KNOWN SK . . . INCLUDES INFORMATION ON CONSTRUCTION, MOUNTING, TYPES OF ENCLOSURES, PERMISSIBLE MOTORS.

GET YOUR COPY FREE! Simply mail a penny post card asking for a copy of Life-Line SK D-C Motor Booklet, B-4595. Address: Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa.

J-21567

Westinghouse Life-Line D-C Motors

For more details circle NED-1002 C4 on enclosed inquiry slip

New Literature & Catalogs

Ways to Use 3-D Pictures

Sawyer's Inc.—How it is possible for business and industry to use the View-Master stereo system of three-dimensional pictures to advantage is told in a 24-page booklet "112 Ways to Use 3-D Pictures for Profit." System makes use of a stereo camera, stereoscopic projector and Viewmaster seven-exposure reels. How to prepare your presentation is related.

For more details circle NED-1003 C4 on enclosed inquiry slip

Screw Machine Products

Conklin Swiss Screw Machine Co.—"Procedures for Precision" is a 16-page illustrated brochure which shows wide variety of screw machine parts and the facilities of this company for producing them. Parts with diameters as small as 0.029-in. can be turned out. Secondary operations performed and quality control are detailed.

For more details circle NED-1004 C4 on enclosed inquiry slip

Hack Sawing Machine

Peerless Machine Co.—Complete descriptions of redesigned Mechani-Cut hack sawing machine are found in 16-page brochure. Covered are 7 x 7, 11 x 11 and 14 x 14-in. machines and automatic, semi-automatic and manual conveyors used in conjunction with them.

For more details circle NED-1005 C4 on enclosed inquiry slip

Commutation for Industry

Han-Kor, Inc.—Compiled for those associated with designing rotating electrical equipment, especially motors, generators and dynamotors, this 16-page illustrated bulletin delves into the factors involved in building and engineering commutators capable of withstanding high heat and speed. Manufacturing, maintenance and materials used are covered and dimensional tolerances for standard and special units are given.

For more details circle NED-1006 C4 on enclosed inquiry slip

Quick-Mounting Brackets

Rakit Corp.—Line of quick-mounting brackets for the support of cable trough, conduit, instrument tubing trough and similar items is subject of descriptions and illustrations in 8-page catalog 853. Many dimensional drawings are included, as are data on wide range of applications.

For more details circle NED-1007 C4 on enclosed inquiry slip

Cameras, Lenses, Equipment

Burke & James, Inc.—Wide variety of camera types, lenses, projectors, lighting and developing equipment, enlargers, etc., is covered in word and picture in 55th annual catalog of 96 pages.

For more details circle NED-1008 C4 on enclosed inquiry slip

Clear Plastic Sheet

Homalite Corp.—Developed from thermosetting resins, CR-39 plastic sheet material described and illustrated in 4-page bulletin 1052 is scratch and abrasion resistant, machines readily by standard techniques and is comparable in optical qualities to plate glass. Mirrored types are shown. It is also chemically inert and has high impact strength. Applications and properties are covered.

For more details circle NED-1009 C4 on enclosed inquiry slip

Prefinished Metals

American Nickeloid Co.—Fabrication techniques, uses and properties of a complete range of prefinished metals are covered in 24-page illustrated booklet. Beauty and production economies are stressed. Preplated finishes available include chromium, nickel, brass and copper on steel, zinc, brass, copper and aluminum base metals. Section devoted to fabrication shows how Mar-Not protective coating preserves finish during severe drawing and forming, and is then readily peeled off.

For more details circle NED-1010 C4 on enclosed inquiry slip

Plexiglas Window Glazing

Rohm & Haas Co.—"Window Glazing with Plexiglas" is title of 16-page illustrated bulletin covering advantages, installation techniques and limitations of material used in this way. Material is available in a wide size range in both colorless and colored styles, has high resistance to breakage and provides worker comfort because of its ability to control glare, solar heat and light diffusion.

For more details circle NED-1011 C4 on enclosed inquiry slip

CONTRACT MANUFACTURING!

BERGER SPECIALIZES in welded sheet steel assemblies

● Interested in volume runs of sheet steel products? Berger's specialized contract manufacturing offers you major plant facilities without the need for heavy investment in tools, dies and special equipment. When you need welded sheet steel assemblies, Berger offers you the use of the latest welding equipment and techniques. Constant research and development have resulted in advanced processes and equipment to make your fabricated sheet steel products lighter in weight, stronger, more attractive, more economical. Berger's specialized service is complete. Welding, assembly, finishing, machine work and packing is fully described in Bulletins 793 and 908. Write:

REPUBLIC STEEL CORPORATION
BERGER MANUFACTURING DIVISION
1084 Belden Ave., Canton 5, Ohio • Export Dept.: Chrysler Bldg., New York 17, N. Y.

For more details circle NED-1012 C4 on enclosed inquiry slip

Off-center pickup for odd-shaped pieces is *easily and quickly accomplished* with a Caldwell EQUALIZING Sling. The cable locks frictionally in the saddle as soon as the weight comes on, yet releases instantly when the piece is set down. The crane operator moves his hook to set the saddle wherever he wants it — for either a level or tilted carry as desired. Made in 9 sizes from 3/4 to 28-ton capacity. Used daily in hundreds of prominent shops. *Write for detailed literature on all ADJUST-A-LEG slings.*

THE CALDWELL CO., 1830 CAMP AVE., ROCKFORD, ILL.

For more details circle NED-1013 C4 on enclosed inquiry slip

Rubber Expansion Joints . . .

Rubber Expansion Joints shown are just a few of the many furnished to a public utility, but adaptable to any pipeline installation for transporting liquids or gases where the temperature does not exceed the range of -10°F. to 200°F. For other temperature conditions, consult our engineers.

With a backlog of more than half a century of experience, La Favorite "know-how" is daily solving many complex problems which involve protection from corrosion and abrasion. Consult La Favorite Engineers, without obligation on your part.

Send blue prints for estimate on costs.

LA FAVORITE RUBBER MFG. CO.
273 Wagaraw Road • Hawthorne, N. J.
RUBBER LININGS • RUBBER COVERING • RUBBER ENGINEERING

For more details circle NED-1014 C4 on enclosed inquiry slip

Accept
HYDRECO BULLETIN 140 ON HYDRAULIC VALVES
it's free!

Here are answers to a thousand questions. The Hydreco Bulletin on Valves is prepared especially for engineers faced with problems on hydraulics. Simply, graphically and thoroughly the various types of hydraulic valves are described and illustrated and their place in the hydraulic circuit is shown.

HYDRECO Hollow-Plunger Valves have long been recognized by design and application engineers as the components around which successful circuits are built. Know the advantages of HYDRECO Single and Multiple Plunger Control Valves... get the facts on the exclusive HYDRECO Hollow-Plunger design.

SHOWS APPLICATIONS AND GIVES PRACTICAL DATA ON HYDRECO VALVES, 5 TO 80 GPM UP TO 1500 PSI OPERATING PRESSURES.

CONTAINS SELECTION DATA, CUTAWAY ILLUSTRATIONS, CHARTS AND TABLES.

EXPLAINS HOW HYDRECO HOLLOW-PLUNGER DESIGN PREVENTS LOAD DROPS AND ASSURES ACCURATE THROTTLING.

Write today for Bulletin 140 fully describing HYDRECO Valves ... what they do ... how they do it!

HYDRECO DIVISION
THE NEW YORK AIR BRAKE COMPANY
1108 EAST 222nd STREET • CLEVELAND 17 • OHIO

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Delivery is Important

SPECIFY BISHOP STAINLESS STEEL TUBING

When crucial delivery dates mean a profit or a loss, specify Bishop because you can depend on Bishop's faster delivery dates for quality stainless steel tubing in small diameters (.008"-1").

J. Bishop & Co., the first American manufacturer to successfully draw small diameter stainless steel tubing, has specialized exclusively in the production of high temperature resisting and corrosion resisting steels, nickel and its alloys as witnessed by the great variety of types offered.

The next time, particularly if delivery is important to you, specify Bishop and be *sure!* Catalog on request.

J. BISHOP & CO. • Platinum Works
STAINLESS STEEL PRODUCTS DIVISION, MALVERN, PA.

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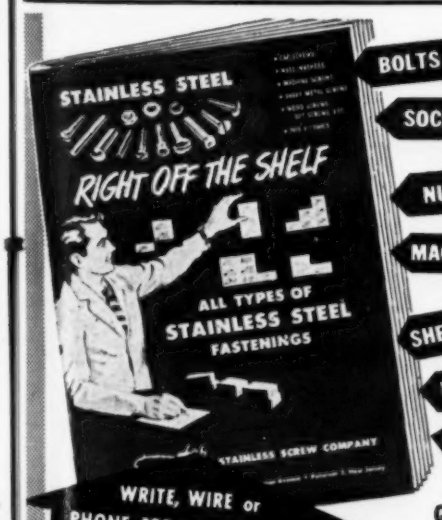

BOLTS & CAP SCREWS
SOCKET, SET & CAP
NUTS, WASHERS
MACHINE SCREWS
SHEET METAL SCREWS
WOOD SCREWS
PIPE FITTINGS

WRITE, WIRE or PHONE FOR YOUR CATALOG *Today*

QUICK DELIVERY on type 410 hardened and type 430 Phillips Head and 18-8 slotted **SHEET METAL SCREWS**

Star Stainless screws have **CLEAN, BRIGHT-AND-SHINY HEADS**

Star STAINLESS SCREW CO.
214 Union Avenue • Paterson 2, N. J.
Direct New York Telephone: ARmory 4-1240 Wisconsin 7-9041

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New Processes & Materials

LAMINATED PLASTIC TUBING in 1/8 to 1 1/4-in. ID sizes

Laminated plastic tubing now being made by special rolling methods is available in sizes from 1/8 to 1 1/4 in. ID and various wall thicknesses. Tubing is used in mechanical and electrical devices, automotive applications, business machines, radio and television. Durez phenolic resins used in manufacturing process lend tubing such qualities as high dielectric strength, low moisture absorption, good heat resistance and dimensional stability, high insulating characteristics, light weight with high strength and easy machinability. Last quality permits micrometric accuracy when tubing is cut, punched and threaded for use as radio and short wave coil forms. Made by **Insulating Tube Co.**, Dept. NED, 26 Cottage St., Poughkeepsie, N. Y.

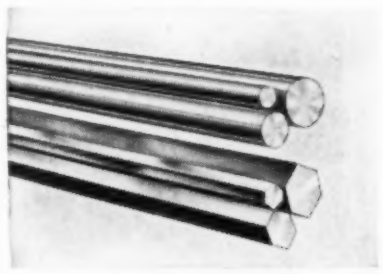
▲ For more details circle **NED-1018 C4** on enclosed inquiry slip ▲

CALCIUM LIGNOSULFONATE highly refined and sugar-free

A desugared extract of coniferous woods, the major constituent of which is calcium lignosulfonate, is now available in highly refined, sulphur dioxide—and sugar-free state. Product is virtually nonhygroscopic. Toranil A, a viscous, coffee-colored solution with characteristic tart odor, and Toranil B, a free-flowing light tan powder, are offered. Both are water soluble in all proportions and can be oxidized, hydrogenated, condensed, polymerized, and in general, reacted with host of organic materials. Extract is presently used as a dispersant wetting agent for fertilizer and oil drilling muds; as an important ingredient in formulation of adhesives for industrial glues and remoistenable tapes, in resin extenders, cement additives, foam stabilizers and emulsifiers. Test samples of both products are available from **Lake States Yeast Corp.**, Rhinelander, Wis.

▲ For more details circle **NED-1019 C4** on enclosed inquiry slip ▲

LEADED STEEL BAR for free-machining applications



Now available in a wide range of sizes, Super La-Led is a free-machining open hearth leaded steel bar which machines up to 80 per cent faster than standard screw stocks. It contains about 1/4-per cent lead and nearly 1/2-per cent sulphur. Steel can be used to replace brass where corrosion is not a factor and where brass has been used primarily because of its machinability. It is available cold drawn in rounds or hexagons. Made by **LaSalle Steel Co.**, 1424 150th St., Hammond, Ind.

▲ For more details circle **NED-1020 C4** on enclosed inquiry slip ▲

PLASTIC HOSE & PIPE resists corrosives at up to 450° F

Synthetic oils and fuels, developed for latest jet engines and often highly corrosive, are easily handled by Fluoroflex-T line of plastic pipe and hose. Made of DuPont Teflon, products are light in weight, have high tensile strength and unlimited shelf life. Practically all corrosive liquids at temperatures from −100 to 450° F are handled without physical, structural or visual changes. Hose is offered in seven sizes from 1/4 through 1 in. Pipe, which is lamination of fluorocarbon resins with glass fabric, is available in 1, 1 1/2, 2, 3 and 4-in. diameters. Special sizes can be produced. Made by **Resistoflex Corp.**, Dept. NED, Belleville 9, N. J.

▲ For more details circle **NED-1021 C4** on enclosed inquiry slip ▲

Troubled with broken floors?

Fix Them Fast With **SPEED PATCH** without halting traffic

World's finest fastest floor fixer! Simply patch holes and truck over them immediately, no waiting. Ready-mixed. Millions of pounds used regularly by industry. Write for details.

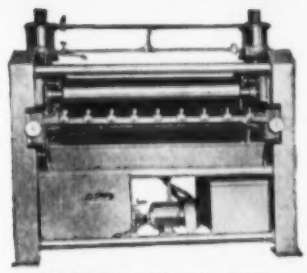
Takes only one minute per sq. ft.

ROCK-TRED Corporation
Manufacturers of a Complete Line of Building Maintenance Materials
7440-7450 North St. Louis Avenue • Skokie, Illinois
In Canada: Rock-Tred Corporation (Canada) Limited, Toronto 3

▲ For more details circle **NED-1022 C4** on enclosed inquiry slip ▲

UNION AUTOMATIC COMPOUND SPREADERS

SAVE *8 WAYS



1 "Die life increased 75%."
2 "Production increased 20%."
3 "Compound saving of 16%."
4 "Rejects reduced 10%."
5 "One helper eliminated."
6 "Paid for itself in 54 days."
7 "Able to use salvage stock for some operations."
8 "25,000 more pieces before changing dies."

MODELS TO FIT ANY STOCK UP TO 96" WIDTH

Union is the foremost designer and manufacturer of roller coating machines for application of drawing or stamping compounds and protective coatings.

Models may be equipped with hardened steel, or with neoprene-covered rolls—also with heated or cooled rolls—to meet your individual requirements.

*The above claims are based on actual statements by users, both large and small—a number of whom have ordered a second and third machine.

Complete data and agent's name on request. Union will design and/or manufacture coating machines to meet your specific requirements.

UNION TOOL CORP.
318 E. MARKET ST., WARSAW, IND., U.S.A.

USERS SAY UNION CUTS COSTS, SPEEDS PRODUCTION

▲ For more details circle **NED-1023 C4** on enclosed inquiry slip ▲

BOOST PUMPS

Boost 100 PSI. air pressure to 10,000 PSI, fluid pressure for $173.25 (FOB Gardena, Calif.). Eight standard models for output fluid pressures of 1,000 to 30,000 PSI. Special models for lower or higher pressures.

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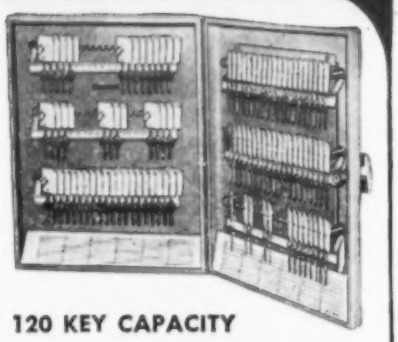

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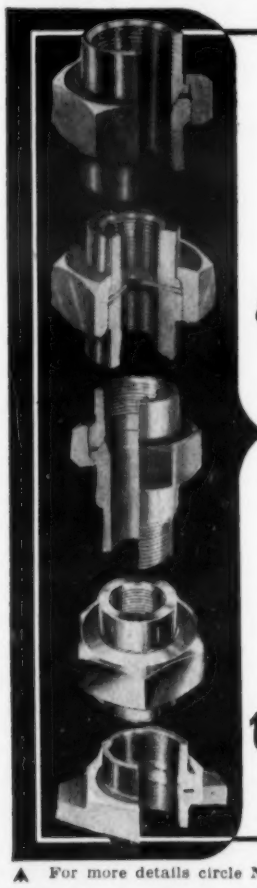

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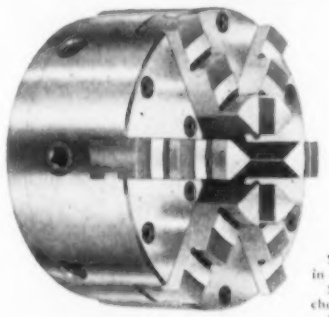

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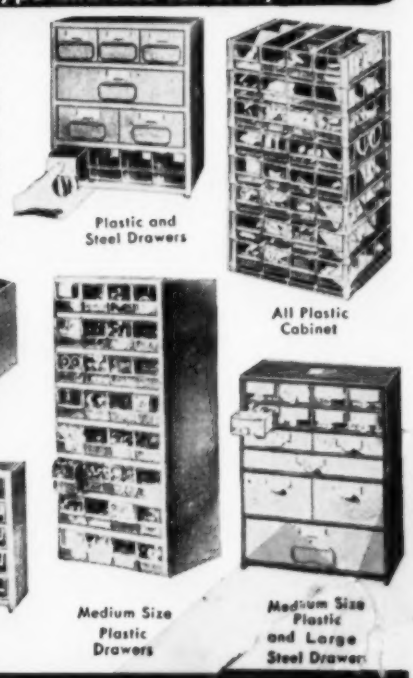

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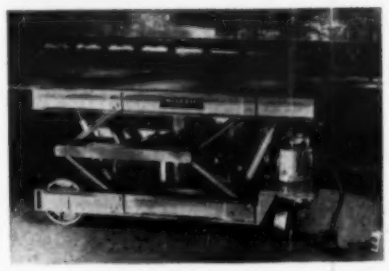

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